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16. ABSTRACT This report presents a statistical analysis of the temporal variability of wind vectors at 1 km altitude intervals from 0 to 27 km altitude taken from a 10-year data sample of twice-daily rawinsonde wind measurements over Vandenberg Air Force Base, California.			
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TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
I INTRODUCTION	1
II TECHNICAL BACKGROUND	
A. Introduction	3
B. Data	3
C. Definitions	4
D. Statistics	4
III ANALYSIS	
A. Introduction	7
B. Wind Component Change with Respect to Time	7
C. Joint Distribution of Wind Component Change with Respect to Time	24
D. Modulus of Vector Wind Change with Respect to Time	30
E. Conditional Vector Wind Ellipses	37
F. Year to Year Variability	46
G. Comparison of Wind Change with Respect to Time at KSC and VAFB	53
IV CONCLUSIONS	55
V REFERENCES	57
APPENDIX	58

LIST OF ILLUSTRATIONS

<u>Figure</u>		<u>Page</u>
1	Zonal and Meridional Wind Component Autocorrelation at 12 km at VAFB (1965-74)	9
2	Constants b and c of Equations 18 and 19 for VAFB during November (1965-74)	12
3	Constants b and c of Equations 18 and 19 for VAFB during December (1965-74)	13
4	Constants b and c of Equations 18 and 19 for VAFB during January (1965-74)	14
5	Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of zonal wind component change, Δu , with respect to time increment, τ , during November at 12 km at VAFB (1965-74)	18
6	Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of meridional wind component change, Δv , with respect to time increment, τ , during November at 12 km at VAFB (1965-74)	19
7	Theoretical (straight lines) and observed (plotted points) of cumulative probability distribution of zonal wind component changes, Δu , with respect to time increment, τ , during December at 12 km at VAFB (1965-74).....	20
8	Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of meridional wind component change, Δv , with respect to time increment, τ , during December at 12 km at VAFB (1965-74)	21
9	Theoretical (straight lines) and observed plotted points) cumulative probability distribution of zonal wind component change, Δu , with respect to time increment, τ , during January at 12 km at VAFB (1965-74)	22
10	Theoretical (straight lines) and observed (plotted points) cumulative probability distribution of meridional wind component change, Δv , with respect to time increment, τ , during January at 12 km at VAFB (1965-74)	23
11	Observed λ_e as a function of theoretical λ_e for a bi-variate normal distribution of wind component changes (Δu , Δv) with respect to time at 12 km during November (1965-74) at VAFB	26

LIST OF ILLUSTRATIONS (Cont'd)

<u>Figure</u>		<u>Page</u>
12	Observed λ_e as a function of theoretical λ_e for a bivariate normal distribution of wind component changes (Δu , Δv) with respect to time at 12 km during December (1965-74) at VAFB	27
13	Observed λ_e as a function of theoretical λ_e for a bivariate normal distribution of wind component changes (Δu , Δv) with respect to time at 12 km during January (1965-74) at VAFB	28
14	November, December and January 95 percent wind change ellipses at 6, 12, 18 and 24 km over VAFB	29
15	November theoretical percentiles of modulus, R, of vector wind change with respect to time interval (τ) at 12 km over VAFB (1965-74)	32
16	December theoretical percentiles of modulus, R, of vector wind change with respect to time interval (τ) at 12 km over VAFB (1965-74)	33
17	January theoretical percentile of modulus, R, of vector wind change with respect to time interval (τ) at 12 km over VAFB (1965-74)	34
18	November conditional 95 percent wind ellipses at 12 km for time increments of 12, 24, 36, 48, 60 and 72 hours at VAFB (1965-74)	38
19	December conditional 95 percent wind ellipses at 12 km for time increments of 12, 24, 36, 48, 60 and 72 hours at VAFB (1965-74)	39
20	January conditional 95 percent wind ellipses at 12 km for time increments of 12, 24, 36, 48, 60 and 72 hours at VAFB (1965-74)	40
21	Wind direction characteristics of a vector wind probability ellipse	45
22	Monthly mean zonal wind for reference period 1965-72 (Falls, Ref. 3) and for individual months during the period 1965-74 at 12 km over VAFB	47
23	Monthly mean meridional wind for reference period 1965-72 (Falls, Ref. 3) and for individual months during the period 1965-74 at 12 km over VAFB	48

LIST OF ILLUSTRATIONS (Cont'd)

<u>Figure</u>		<u>Page</u>
24	Distribution of Deviations, D, of the monthly mean zonal and meridional wind from the reference month mean given by Falls [3]	49
25	95 Percent vector wind ellipse at 12 km during November 1965 and 1969 at VAFB	52
26	Comparison of 95 percent wind change ellipses at 12 km from VAFB (1965-74) and KSC (1956-70)	54

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Constants b and c of Equations 18 and 19 at Altitudes from 1 to 27 km during December, January and November (1965-74) at VAFB	11
2	Calculated [Eqs. 22, 23] and observed $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ during November (1965-74) at VAFB	15
3	Calculated [Eqs. 22, 23] and observed $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ during December (1965-74) at VAFB	16
4	Calculated [Eqs. 22, 23] and observed $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ during January (1965-74) at VAFB	17
5	Theoretical and Observed Modulus, R, of Vector Wind Change with respect to time at 12 km during November (1965-74) at VAFB	35
6	Theoretical and Observed Modulus, R, of Vector Wind Change with respect to time at 12 km during December (1965-74) at VAFB	36
7	Theoretical and Observed Modulus, R, of Vector Wind Change with respect to time at 12 km during January (1965-74) at VAFB	37
8	Wind direction (degrees) characteristics of 95 percent conditional wind ellipses at VAFB during November (1965-74) for an elapsed Time (τ) of 12 hours	42
9	Wind direction (degrees) characteristics of 95 percent conditional wind ellipses at VAFB during December (1965-74) for an elapsed time (τ) of 12 hours	43
10	Wind direction (degrees) characteristics of 95 percent conditional wind ellipses at VAFB during January (1965-74) for an elapsed time (τ) of 12 hours	44
11	Bivariate Normal Statistics of the Vector Wind at 12 km over VAFB for individual months during the period 1965-74	50
A-1	Notation of Variables	58

I. INTRODUCTION

It is anticipated that Space Shuttle launches from Vandenberg Air Force Base (VAFB), California, will be constrained to minimize the probability of exceeding design maximum wind loads. The reduction of wind loads is normally achieved by biasing the ascent trajectory with respect to a nominal wind profile. The wind profile to be used and the rationale for its selection is the subject of continuing studies. Ideally, maximum reduction of wind loads would be achieved if wind biasing is with respect to the wind profile "seen" by the vehicle; such a profile is not observable prior to launch because of the variability of wind with respect to time and the inability of available wind measurement systems to measure winds in the space-time coordinate system of the vehicle. The time required for implementation of modifications to the wind bias program based on updated wind profile data also dictates that the wind profile measurement must be obtained prior to launch.

The specification of an optimum time for the wind profile measurement depends in part on quantitative information on the temporal variability of winds aloft and knowledge of the load reduction achieved by utilizing wind profiles obtained at various time intervals prior to launch. Establishment of the optimum time interval is the objective of proposed simulation studies. A simulation study could involve the use of a series of wind profiles measured at closely spaced time intervals. The last profile of the series is chosen to represent the profile seen by the vehicle and each preceding profile is used for establishing a series of wind bias trajectories. The loads are calculated for each biased trajectory, and the amount of load reduction achieved is tabulated as a function of time interval prior to launch. The results are also compared with the load reduction that would have been achieved by simply using the monthly mean wind profile as the basis for the biased trajectory. An optimum time interval is chosen based on a statistical analysis of a large number of simulations. The ultimate implementation of the results of such a study is the establishment of a wind monitoring scheme to support space shuttle launches.

Quantitative information on wind change with respect to time is the basis for the simulation studies described above. This is the second report prepared by SAI on the analysis of wind change at Space Shuttle launch sites. This report is concerned with the Vandenberg AFB, California, launch site. The previous report [1] was concerned with the Cape Kennedy, Florida, launch site.

This report describes wind change at Vandenberg AFB for time intervals from 12 to 72 hours at altitudes from 0 to 27 km calculated from a ten-year (1965-74) sample of twice daily Rawinsonde profiles. Wind change with respect to time is presented in terms of statistical summaries of wind component change and the modulus of vector wind change; the parameters of idealized theoretical probability distribution functions representing the wind change variables are also presented. The validity of the hypothetical distributions is established by comparing them with the observed distributions. These distribution functions can be utilized to obtain statistical predictions of wind change with respect to time.

Succeeding sections of this report consist of a brief statement of technical background (Section II), an analysis of wind change statistics (Section III), and conclusions (Section IV); the calculated statistics of wind change with respect to time by reference month at 1 km altitude intervals from 0 to 27 km are listed in the Appendix.

II. TECHNICAL BACKGROUND

A. INTRODUCTION

The large sample of wind profiles obtained at VAFB is suitable for calculation of an equally large sample of wind change data. In order to readily abstract information on wind change from these data, it is necessary to perform a second series of calculations which provide statistical summaries of wind change. The choice of statistical parameters for description of wind change is based in part on the need to specify the parameters of theoretical distributions of wind change. These theoretical distribution functions are described in detail by Smith [2]. The basic distribution of the four variables consisting of the zonal and meridional components of the vector wind at an initial time and after an elapsed time, Δt , is quadrivariate normal. The conditional distribution of the wind components at a specified future time, given the wind components at an initial time, is bivariate normal. The modulus of the wind change vector is Rayleigh and the distribution of either the zonal or meridional wind component change is univariate normal. A significant portion of the analytical discussion in Section III of this report is the presentation of observed distributions of wind change and comparison with the theoretical distributions of wind change variables. Succeeding paragraphs of this section are concerned with a description of the wind profile data and the definition of statistical parameters of wind change used in the various theoretical distribution functions.

B. DATA

Wind change statistics for periods from 12 to 72 hours are calculated from the serially complete (0-27 km) Rawinsonde data at 1 km altitude intervals obtained twice daily during the period 1965-74 at Vandenberg AFB, California. The basic winds aloft data are recorded in terms of wind direction, θ and magnitude, W . The wind vector is expressed in the standard meteorological coordinate system in which the direction from which the wind is blowing is measured in degrees clockwise from true north. The zonal component, u , of the wind vector is positive for a west (west to

east) wind ($\theta=270^0$) and negative for an east (east to west) wind ($\theta=90^0$); the meridional component, v , is positive for a south (south to north) wind ($\theta=180^0$) and negative for a north (north to south) wind ($\theta=0^0$); u and v are obtained from θ and W according to:

$$u = -W \sin \theta, \quad 0 \leq \theta \leq 360^0 \quad (1)$$

$$v = -W \cos \theta, \quad (2)$$

The relation between θ defined above and the angle defined in standard mathematical polar form is:

$$\theta = 270 - \theta_{\text{Math}} \quad (3)$$

C. DEFINITIONS

The subscript 0 is used to denote the initial value of a variable, and the subscript 1 denotes the variable after an elapsed time, Δt . Thus:

$$\Delta u = u_1 - u_0 \quad (4)$$

$$\Delta v = v_1 - v_0 \quad (5)$$

Where Δu and Δv are the components of the wind change for a specified Δt , the modulus, R , of the wind change with respect to time is given by:

$$R = \sqrt{(\Delta u)^2 + (\Delta v)^2} \quad (6)$$

The statistical means are denoted by an overbar, the standard deviations and the correlation coefficients are denoted by s_x and $R(X,Y)$, respectively, with X and Y replaced with the notation appropriate to the variable of interest.

D. STATISTICS

The wind vector measurements at an initial time and after an elapsed time are treated in this investigation as a sample from a quadrivariate normal distribution defined by the fourteen statistics listed below:

MEANS

$$\bar{u}_0, \bar{v}_0, \bar{u}_1, \bar{v}_1$$

STANDARD DEVIATIONS

$$\sigma_{u_0}, \sigma_{v_0}, \sigma_{u_1}, \sigma_{v_1}$$

CORRELATION COEFFICIENTS

$$R(u_0, v_0), R(u_0, u_1)$$

$$R(v_0, v_1), R(u_1, v_1)$$

$$R(u_1, v_0), R(v_1, u_0)$$

The fourteen statistics of the quadrivariate normal distribution of vector wind difference with respect to time consist of the five bivariate normal statistics of vector wind at an initial time ($u_0, v_0, \sigma_{u_0}, \sigma_{v_0}$ and $R(u_0, v_0)$) and the nine statistics involving component differences which can be calculated from the quadrivariate statistics listed above according to the following equations:

MEANS

$$\Delta u = \bar{u}_1 - \bar{u}_0 = u_1 - u_0 \quad (8)$$

$$\Delta v = \bar{v}_1 - \bar{v}_0 = v_1 - v_0 \quad (9)$$

STANDARD DEVIATIONS

$$\sigma_{\Delta u} = \sqrt{\sigma_{u_1}^2 + \sigma_{u_0}^2 - 2\sigma_{u_1}\sigma_{u_0}R(u_1, u_0)} \quad (10)$$

$$\sigma_{\Delta v} = \sqrt{\sigma_{v_1}^2 + \sigma_{v_0}^2 - 2\sigma_{v_1}\sigma_{v_0}R(v_1, v_0)} \quad (11)$$

where $R(x, y)$ is the correlation coefficient of variables x and y

CORRELATION COEFFICIENTS

$$R(u_0, \Delta u) = \frac{\sigma_{u_1} R(u_0, u_1) - \sigma_{u_0}}{\sigma_{\Delta u}} \quad (11)$$

Where, $\sigma_{\Delta u}$ is obtained from Equation 9

$$R(v_0, \Delta v) = \frac{\sigma_{v_1} R(v_0, v_1) - \sigma_{v_0}}{\sigma_{\Delta v}} \quad (12)$$

Where, $\sigma_{\Delta v}$ is obtained from Equation 10

$$R(\Delta u, v_0) = \frac{\sigma_{u_1} R(v_0, u_1) - \sigma_{u_0} R(u_0, v_0)}{\sigma_{\Delta u}} \quad (13)$$

$$R(\Delta v, u_0) = \frac{\sigma_{v_1} R(u_0, v_1) - \sigma_{v_0} R(u_0, v_0)}{\sigma_{\Delta v}} \quad (14)$$

$$R(\Delta u, \Delta v) = \frac{[\sigma_{u_1} \sigma_{v_1} R(u_1, v_1) - \sigma_{u_1} \sigma_{v_0} R(u_1, v_0) + \sigma_{u_0} \sigma_{v_1} R(u_0, v_1) + \sigma_{u_0} \sigma_{v_0} R(u_0, v_0)]}{\sigma_{\Delta u} \sigma_{\Delta v}} \quad (15)$$

III. ANALYSIS

A. INTRODUCTION

The statistics presented in the appendix of this report can be useful in the establishment of a basis for certain aspects of Space Shuttle Launch planning for Vandenberg AFB. A prelaunch wind monitoring program may be required to provide data for assessment or modification of the Space Shuttle wind bias program. The development and utilization of the wind monitoring program will require knowledge of the magnitude of vector wind change with respect to time. The analysis presented in this section establishes a theoretical basis for estimation of wind change. This is accomplished by comparison of theoretical probability distributions, which contain wind change sample statistics as parameters (from the appendix of this report), to observed probability distributions of wind change. Wind change with respect to time is analyzed herein in terms of wind component change, unconditional and conditional joint distribution of wind component change and the modulus of vector wind change.

B. WIND COMPONENT CHANGE WITH RESPECT TO TIME

The theoretical probability distribution of wind component change with respect to time is univariate normal with zero mean and standard deviation given by Equations 9 and 10; the assumption of zero means of component differences is verified by the sample statistics given in the appendix. The theoretical normal distribution of component differences can be derived by using either the standard deviations of component differences given in the appendix or an estimate which can be obtained from the standard deviation of the components if it is assumed that:

$$\sigma_{u_0} = \sigma_{u_1} = \sigma_u$$

$$\sigma_{v_0} = \sigma_{v_1} = \sigma_v$$

Equations 9 and 10 reduce to

$$\sigma_{\Delta u} = \sqrt{2} \sigma_u \sqrt{1 - R(u_1, u_0)} \quad (16)$$

$$\sigma_{\Delta v} = \sqrt{2} \sigma_v \sqrt{1 - R(v_1, v_0)} \quad (17)$$

The wind component autocorrelation functions, $R(u_1, u_0)$ and $R(v_1, v_0)$ can be represented by a negative exponential function of time increment, τ ; i.e.,

$$R(u_1, u_0) = \text{EXP}(-b\tau) \quad (18)$$

$$R(v_1, v_0) = \text{EXP}(-c\tau) \quad (19)$$

where b and c are computed according to

$$b = - \frac{\sum_i \tau_i \ln R_i(u_1, u_0)}{\sum_i \tau_i^2} \quad (20)$$

$$c = - \frac{\sum_i \tau_i \ln R_i(v_1, v_0)}{\sum_i \tau_i^2} \quad (21)$$

Examples of the decay of the autocorrelation function at 12 km during November, December and January at VAFB are illustrated in Figure 1; the lines in the figure represent the decay rate predicted by Equations 18 and 19.

Substitution of Equations 18 and 19 into 16 and 17, respectively, yields a simple expression for $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ in terms of σ_u and σ_v , respectively.

$$\sigma_{\Delta u} = \sqrt{2} \sigma_u \sqrt{1 - \text{EXP}(-b\tau)} \quad (22)$$

$$\sigma_{\Delta v} = \sqrt{2} \sigma_v \sqrt{1 - \text{EXP}(-c\tau)} \quad (23)$$

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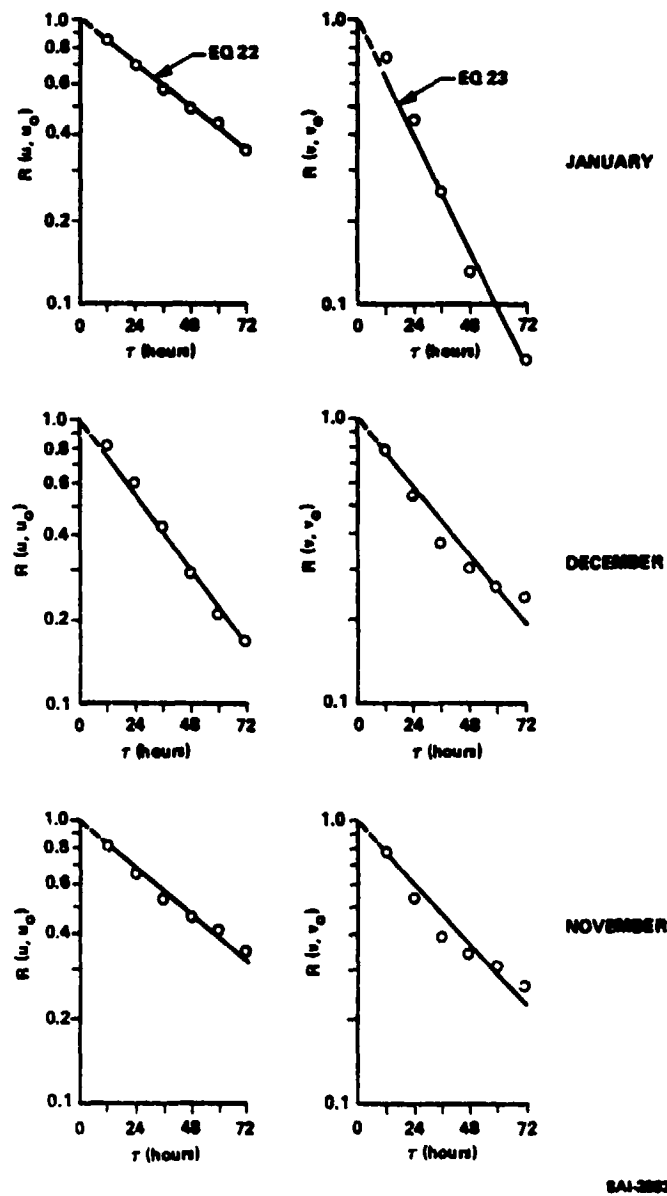


Figure 1. Zonal and Meridional Wind Component Autocorrelation at 12 km at VAFB (1965-74)

Equations 22 and 23 indicate that $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ are asymptotic to $\sqrt{2} \sigma_u$ and $\sqrt{2} \sigma_v$ for large values of τ . Therefore, estimates of the extreme value of $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ are obtained by setting τ equal to ∞ in equations 22 and 23.

The calculated values of b and c for VAFB during November, December and January listed in Table 1 are also plotted in Figures 2 through 4. Disregarding minor variations at small altitude intervals, the decay of the zonal component autocorrelation function with respect to time decreases with altitude during November, December and January. The decay of the meridional component autocorrelation function generally exceeds the decay for the zonal component during November, at altitudes above 16 km during December and above 1 km during July. The most rapid decay of the autocorrelation function occurs for the meridional wind component at altitudes between 8 and 16 km during January. The calculated and observed values of $\sigma_{\Delta u}(\tau)$ and $\sigma_{\Delta v}(\tau)$ at 1, 6, 12, 18 and 24 km during November, December and January are listed in Tables 2 through 4. The estimated extreme values of $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$, ($\sqrt{2} \sigma_u$ and $\sqrt{2} \sigma_v$, respectively), are listed at the bottom of each column of calculated values. The comparisons in Tables 1 through 3 indicate that $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ can be accurately estimated by application of Equations 22 and 23, respectively. General application of this estimation technique at other locations utilizing published statistics of wind component standard deviations (as in [3], for example) would require a more adequate knowledge of the form of the autocorrelation function than is presently available.

The theoretical distribution of wind component differences has been derived from sample estimates of $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ and $\overline{\Delta u}$ and $\overline{\Delta v}$ (given in the appendix) for the intervals of 12, 24, 36 and 48 hours during November, December and January at 12 km over VAFB; the theoretical normal distributions are plotted as straight lines in Figures 5 through 10; the plotted symbols represent the observed distributions of Δu and Δv . It is indicated that the observed distribution of component changes is accurately represented by the theoretical normal distribution for a large range of probabilities; the deviation of the observed distribution from the theoretical distribution at the extreme probabilities is attributed to the small sample of observations and errors in the Rawinsonde data.

Table 1. Constants $b(\text{hr}^{-1})$ and $c(\text{hr}^{-1})$ of Equations 18 and 19
at Altitudes From 1 to 27 km During December, January
and November (1965-74) at VAFB

Z(km)	NOV		DEC		JAN	
	$10^2 b$	$10^2 c$	$10^2 b$	$10^2 c$	$10^2 b$	$10^2 c$
1	3.400	3.850	4.808	3.153	3.582	3.201
2	2.319	2.999	3.401	2.440	2.176	3.152
3	2.058	2.495	2.999	2.125	2.048	2.679
4	2.025	2.366	3.036	2.144	1.910	2.754
5	1.871	2.308	3.059	2.318	1.856	2.773
6	1.812	2.285	2.998	2.517	1.863	2.896
7	1.775	2.391	2.952	2.666	1.884	2.992
8	1.720	2.307	3.051	2.668	1.943	3.237
9	1.781	2.228	3.011	2.535	1.935	3.468
10	1.735	2.157	2.847	2.422	1.787	3.628
11	1.592	2.037	2.511	2.308	1.558	3.860
12	1.544	2.055	2.488	2.247	1.455	3.845
13	1.513	2.050	2.330	2.124	1.356	4.304
14	1.518	2.037	2.485	2.013	1.321	4.237
15	1.444	1.980	2.275	1.904	1.364	3.749
16	1.575	1.985	2.163	1.898	1.373	2.935
17	1.525	2.041	1.821	1.984	1.318	2.635
18	1.366	2.234	1.667	1.911	1.200	2.202
19	1.328	2.413	1.414	2.138	1.063	1.964
20	1.183	2.506	1.316	2.543	0.920	1.792
21	1.030	2.632	1.277	2.727	0.860	1.907
22	0.858	3.658	1.039	2.735	0.842	1.824
23	0.673	3.274	0.875	2.681	0.821	1.894
24	0.585	3.420	0.755	2.629	0.800	1.827
25	0.553	2.939	0.743	2.268	0.794	1.746
26	0.400	2.444	0.722	2.195	0.691	1.710
27	0.365	2.349	0.633	1.938	0.613	1.556

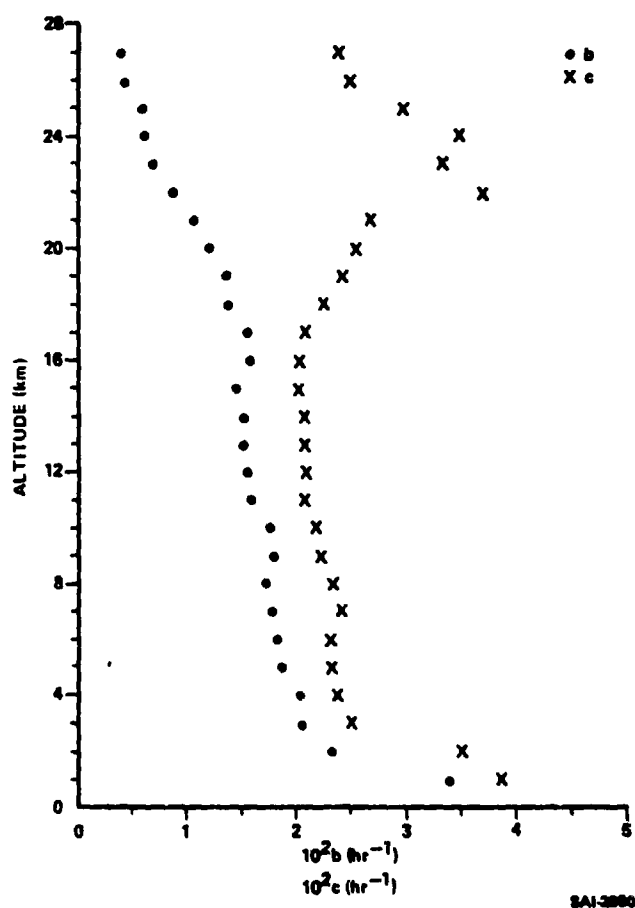


Figure 2. Constants b and c of Equations 18 and 19 for VAFB During November (1965-74)

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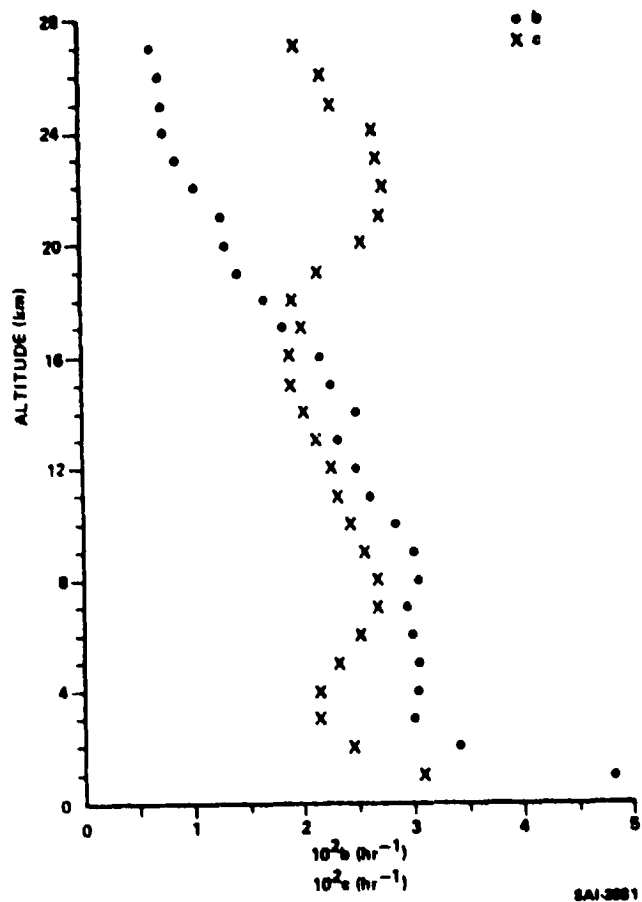


Figure 3. Constants b and c of Equations 18 and 19 for VAFB During December (1965-74)

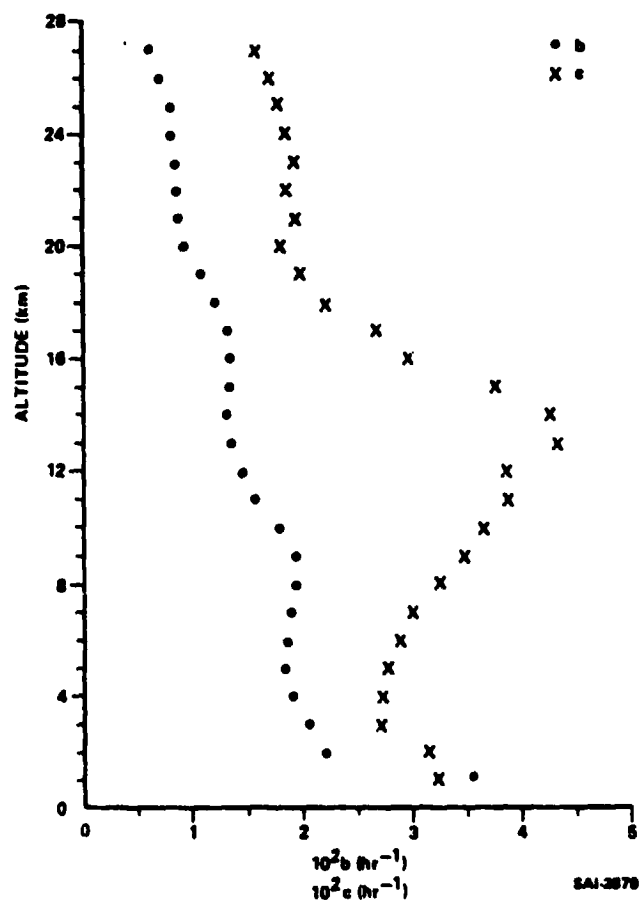


Figure 4. Constants b and c of Equations 18 and 19 for VAFB During January (1965-74)

Table 2. Calculated [Eqs. 22, 23] and Observed $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ during November (1965-74) at VAFB

ALTITUDE (KM)	τ (HOURS)	$\sigma_{\Delta u}$ (m/sec)		$\sigma_{\Delta v}$ (m/sec)	
		CALCULATED	OBSERVED	CALCULATED	OBSERVED
24	12	2.92	3.98	2.70	3.08
	24	4.08	4.61	3.48	3.55
	36	4.89	5.31	3.92	3.87
	48	5.56	5.71	4.18	4.15
	60	6.11	6.03	4.34	4.32
	72	6.58	6.39	4.45	4.44
	∞	11.23	—	4.85	—
18	12	3.56	4.52	3.86	4.03
	24	4.84	5.45	5.13	5.09
	36	5.70	6.08	5.92	6.10
	48	6.35	6.58	6.48	6.84
	60	6.84	6.78	6.84	6.96
	72	7.24	7.01	7.12	7.12
	∞	9.15	—	7.98	—
12	12	9.86	10.17	12.64	12.75
	24	13.35	14.18	18.87	18.41
	36	15.88	16.42	19.55	21.23
	48	17.35	17.88	21.41	22.18
	60	18.64	18.47	22.76	22.88
	72	19.65	19.40	23.78	23.55
	∞	23.98	—	27.04	—
6	12	7.30	7.77	9.42	9.95
	24	9.81	10.54	12.50	13.88
	36	11.43	12.08	14.40	15.88
	48	12.58	13.08	15.70	16.44
	60	13.45	13.53	16.61	16.60
	72	14.10	13.90	17.28	17.05
	∞	18.52	—	19.23	—
1	12	3.14	3.84	5.93	6.28
	24	4.05	4.55	7.57	7.23
	36	4.55	4.92	8.44	8.44
	48	4.88	5.05	8.94	9.13
	60	5.05	5.14	9.25	9.35
	72	5.81	5.18	9.43	9.34
	∞	5.42	—	9.74	—

SAI-3877

Table 3. Calculated [Eqs. 22, 23] and Observed $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ during December (1965-74) at VAFB

ALTITUDE (KM)	T (HOURS)	$\sigma_{\Delta u}$ (m/sec)		$\sigma_{\Delta v}$ (m/sec)	
		CALCULATED	OBSERVED	CALCULATED	OBSERVED
24	12	3.21	4.05	2.57	3.45
	24	4.44	4.84	3.38	3.78
	36	5.32	5.38	3.86	3.94
	48	6.01	6.04	4.18	4.25
	60	6.58	6.61	4.40	4.42
	72	7.08	7.08	4.55	4.47
	∞	10.90	--	4.94	--
18	12	4.05	5.04	4.06	4.42
	24	5.47	6.21	5.44	5.76
	36	6.39	6.77	6.32	6.48
	48	7.06	7.10	6.95	6.98
	60	7.57	7.38	7.41	7.32
	72	7.96	7.68	7.75	7.49
	∞	9.52	--	8.97	--
12	12	11.17	9.49	12.99	12.44
	24	14.74	14.10	17.26	18.06
	36	16.90	16.92	19.91	21.03
	48	18.35	18.66	21.71	22.03
	60	19.35	19.67	23.00	22.65
	72	20.06	20.34	23.83	22.97
	∞	21.98	--	26.73	--
6	12	9.58	8.60	10.68	11.01
	24	12.48	12.12	14.08	15.03
	36	14.16	14.23	16.15	17.13
	48	15.22	15.38	17.52	17.77
	60	15.92	16.21	18.46	18.31
	72	16.39	16.86	19.13	18.87
	∞	17.42	--	20.92	--
1	12	4.14	4.27	5.80	6.01
	24	5.17	5.44	7.53	7.87
	36	5.67	5.84	8.52	8.73
	48	5.93	5.89	9.13	9.10
	60	6.07	6.15	9.53	9.44
	72	6.15	6.42	9.79	9.71
	∞	6.25	--	10.34	--

SAI-2878

Table 4. Calculated [Eqs. 22, 23] and Observed $\sigma_{\Delta u}$ and $\sigma_{\Delta v}$ During January (1965-74) at VAFB

ALTITUDE (Kft)	T (HOURS)	$\sigma_{\Delta u}$ (m/sec)		$\sigma_{\Delta v}$ (m/sec)	
		CALCULATED	OBSERVED	CALCULATED	OBSERVED
24	12	3.97	4.51	2.62	3.33
	24	5.49	5.41	3.52	3.71
	36	6.57	6.32	4.10	4.07
	48	7.41	7.36	4.51	4.40
	60	8.10	8.24	4.81	4.83
	72	8.68	8.83	5.06	5.11
	∞	13.12	---	5.90	---
18	12	3.62	4.36	3.68	3.81
	24	4.96	5.09	4.89	4.80
	36	5.85	5.85	5.65	5.64
	48	6.54	6.49	6.17	6.22
	60	7.08	7.06	6.54	6.54
	72	7.52	7.55	6.81	6.82
	∞	9.89	---	7.64	---
12	12	10.40	9.99	13.84	11.86
	24	14.10	14.42	17.86	17.01
	36	16.58	16.88	19.87	19.56
	48	18.41	18.36	20.83	20.98
	60	19.81	19.48	21.52	21.43
	72	20.92	20.87	21.96	21.77
	∞	25.94	---	22.64	---
6	12	7.94	7.71	9.37	9.44
	24	10.86	10.89	12.24	12.86
	36	12.40	12.43	13.91	14.62
	48	13.84	13.43	14.98	15.27
	60	14.56	14.17	15.88	15.44
	72	15.25	15.01	16.18	15.61
	∞	17.75	---	17.28	---
1	12	3.83	4.10	5.06	5.54
	24	4.66	5.08	7.32	7.56
	36	5.22	5.44	8.27	8.69
	48	5.56	5.55	8.86	9.07
	60	5.77	5.78	9.24	9.17
	72	5.90	5.87	9.49	9.46
	∞	8.14	---	10.00	---

SAI-3901

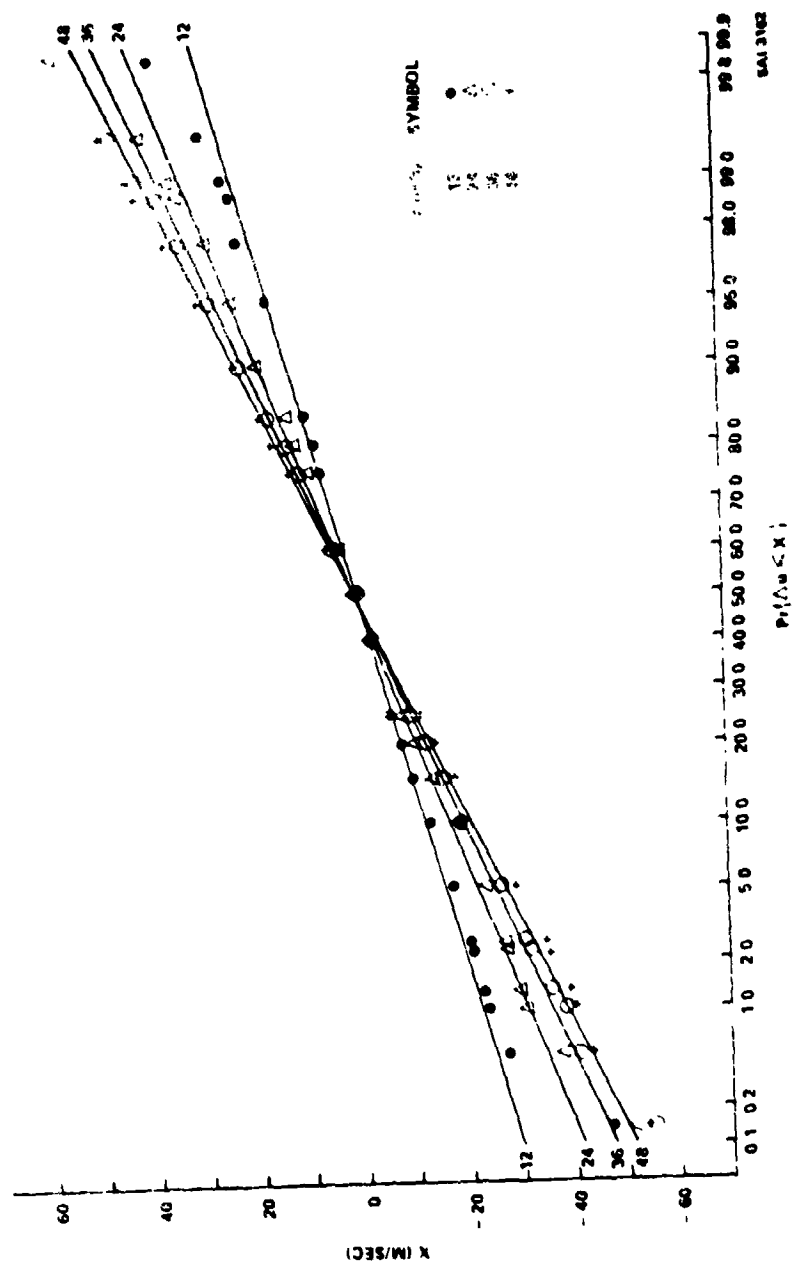


Figure 5. Theoretical (straight lines) and Observed (plotted points) Cumulative Probability Distribution of Zonal Wind Component Change, Δu , with Respect to Time Increment, τ , During November at 12 km at VAFB (1965-74)

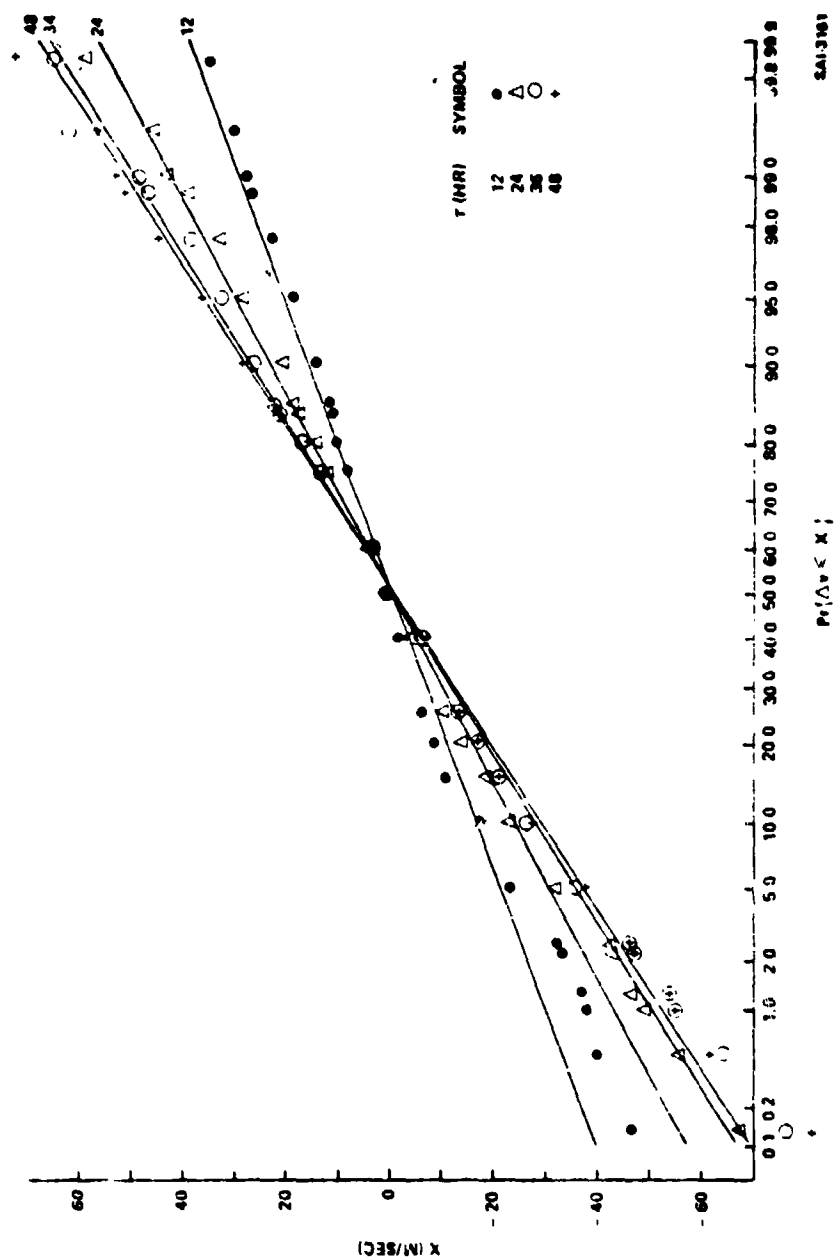


Figure 6. Theoretical (straight lines) and Observed (Plotted Points) Cumulative Probability Distribution of Meridional Wind Component Change, Δv , with respect to time Increment, τ , During November at 12 km at VAFB (1965-74)

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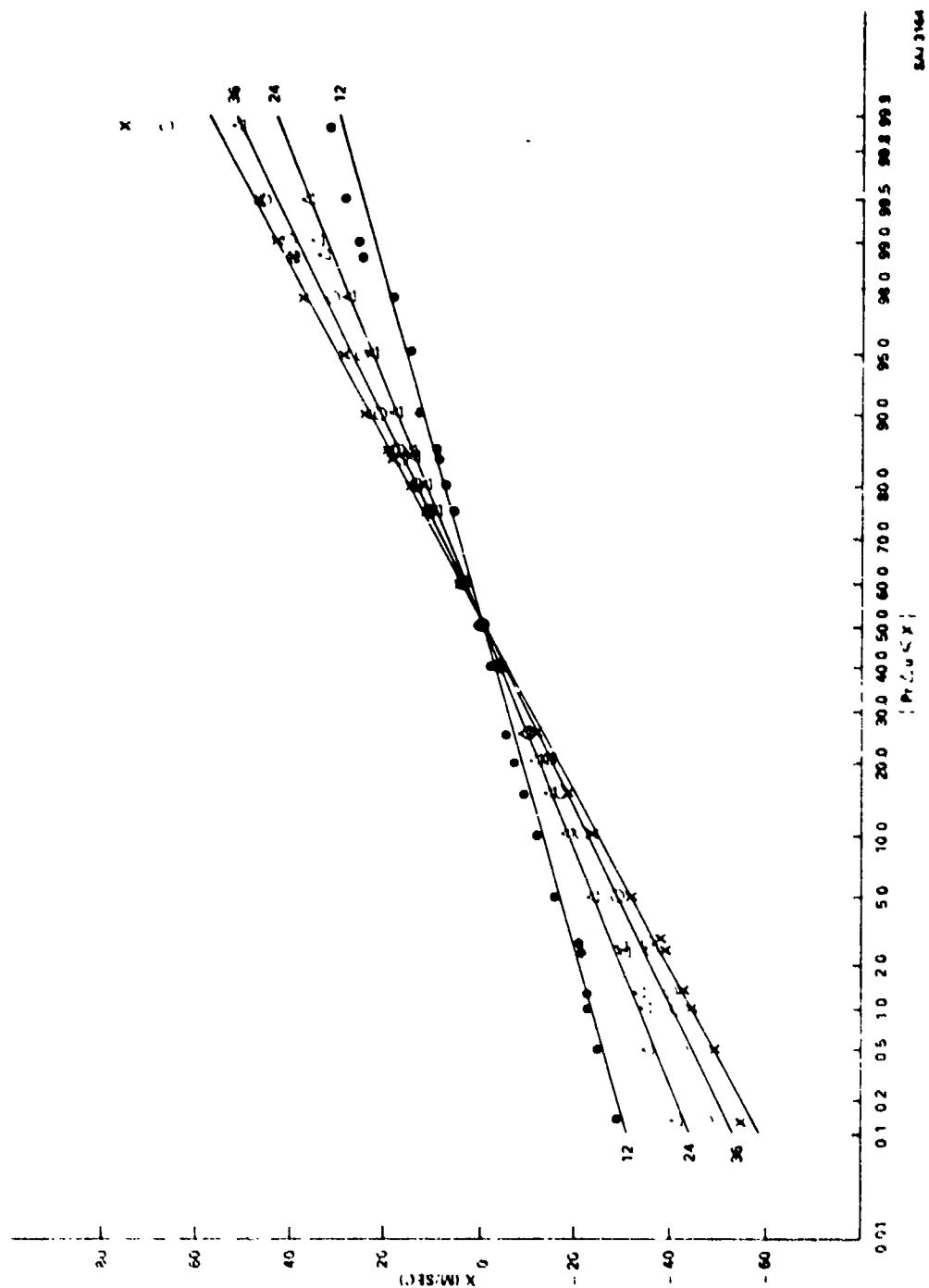


Figure 7. Theoretical (straight lines) and Observed (plotted points) Cumulative Probability Distribution of Zonal Wind Component Changes, Δu , with Respect to Time Increment, t , During December at 12 km at VAFB (1965-74)

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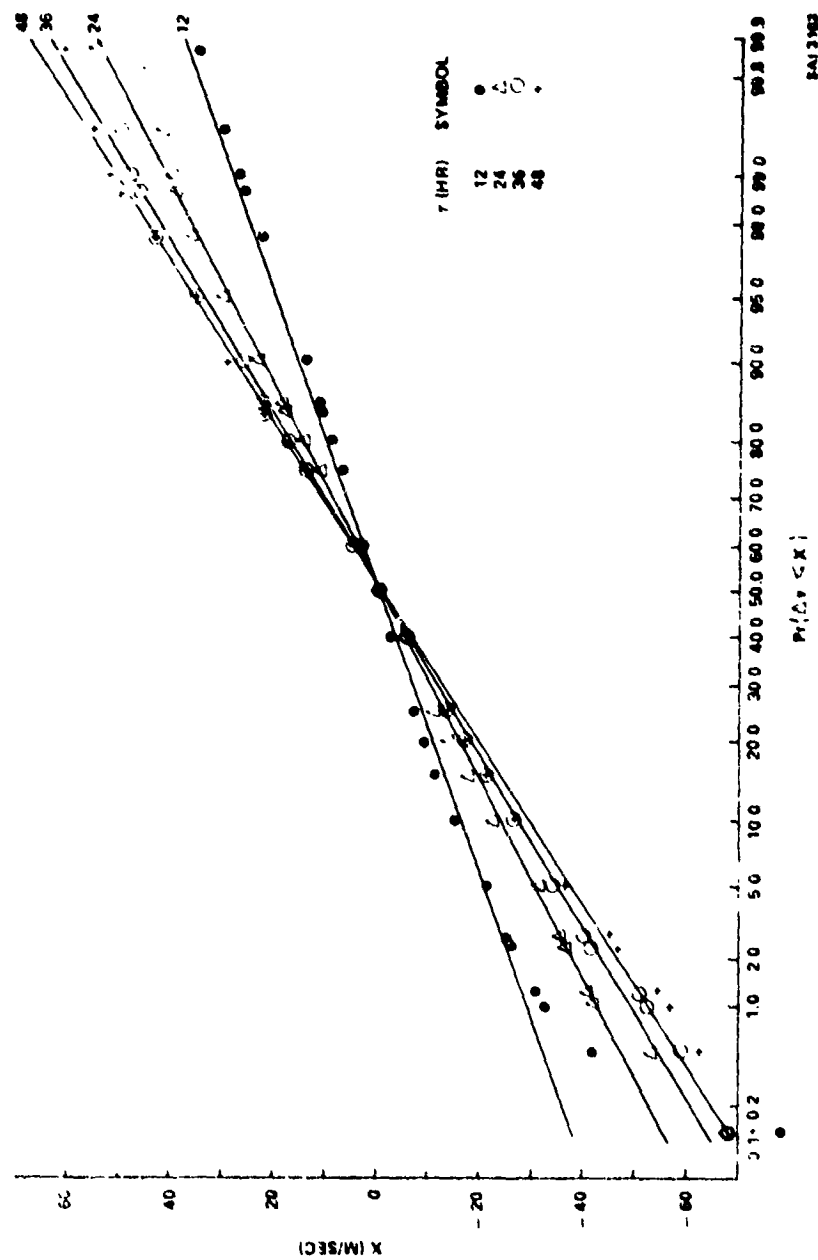


Figure 8. Theoretical (straight lines) and Observed (plotted points) Cumulative Probability Distribution of Meridional Wind Component Change, Δv , with Respect to Time Increment, τ , during December at 12 km at VAFB (1965-74)

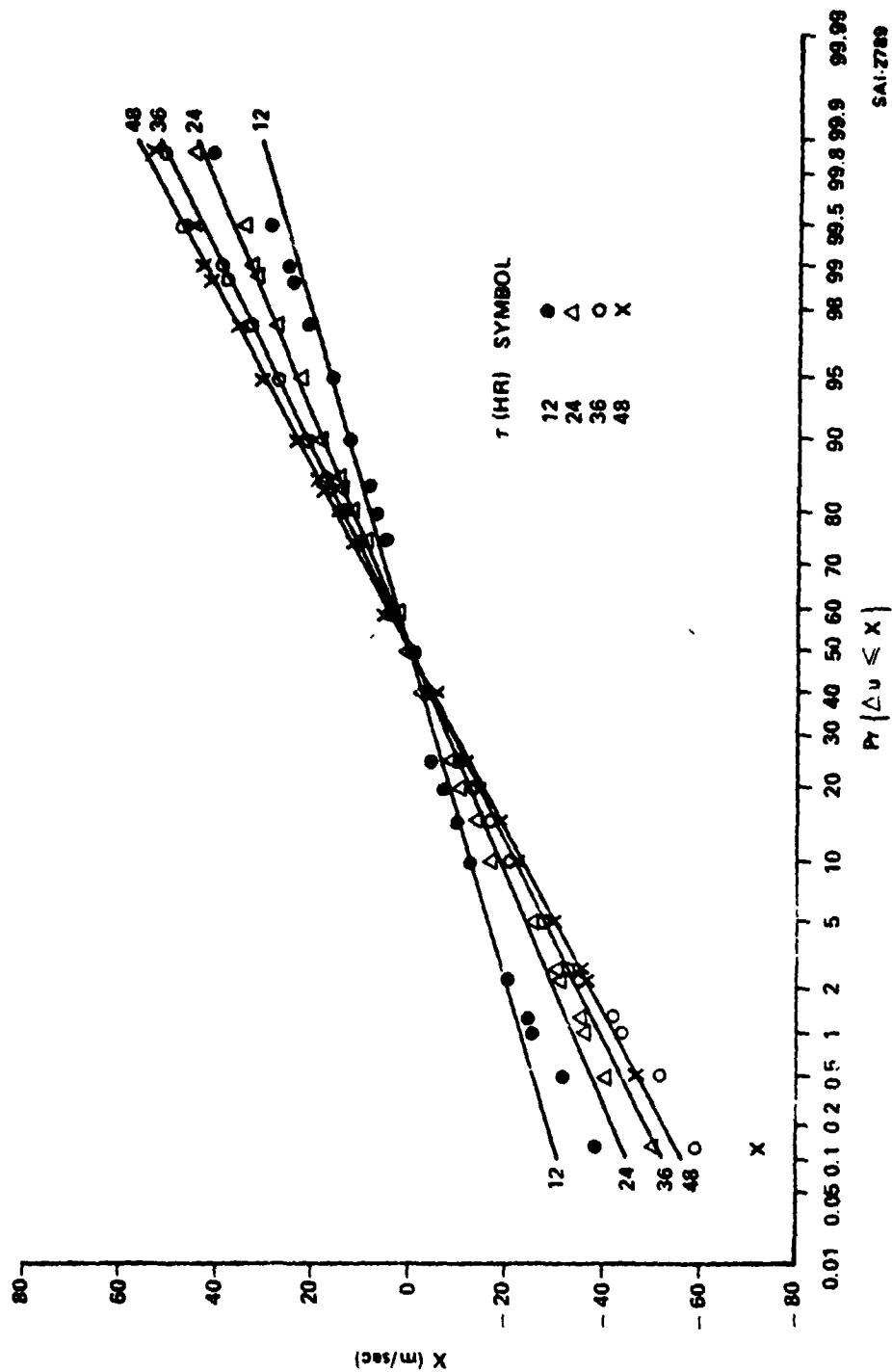


Figure 9. Theoretical (straight lines) and Observed Plotted Points) Cumulative Probability Distribution of Zonal Wind Component Change, Δu , with Respect to Time Increment, τ , During January at 12 km at VAFB (1965-74)

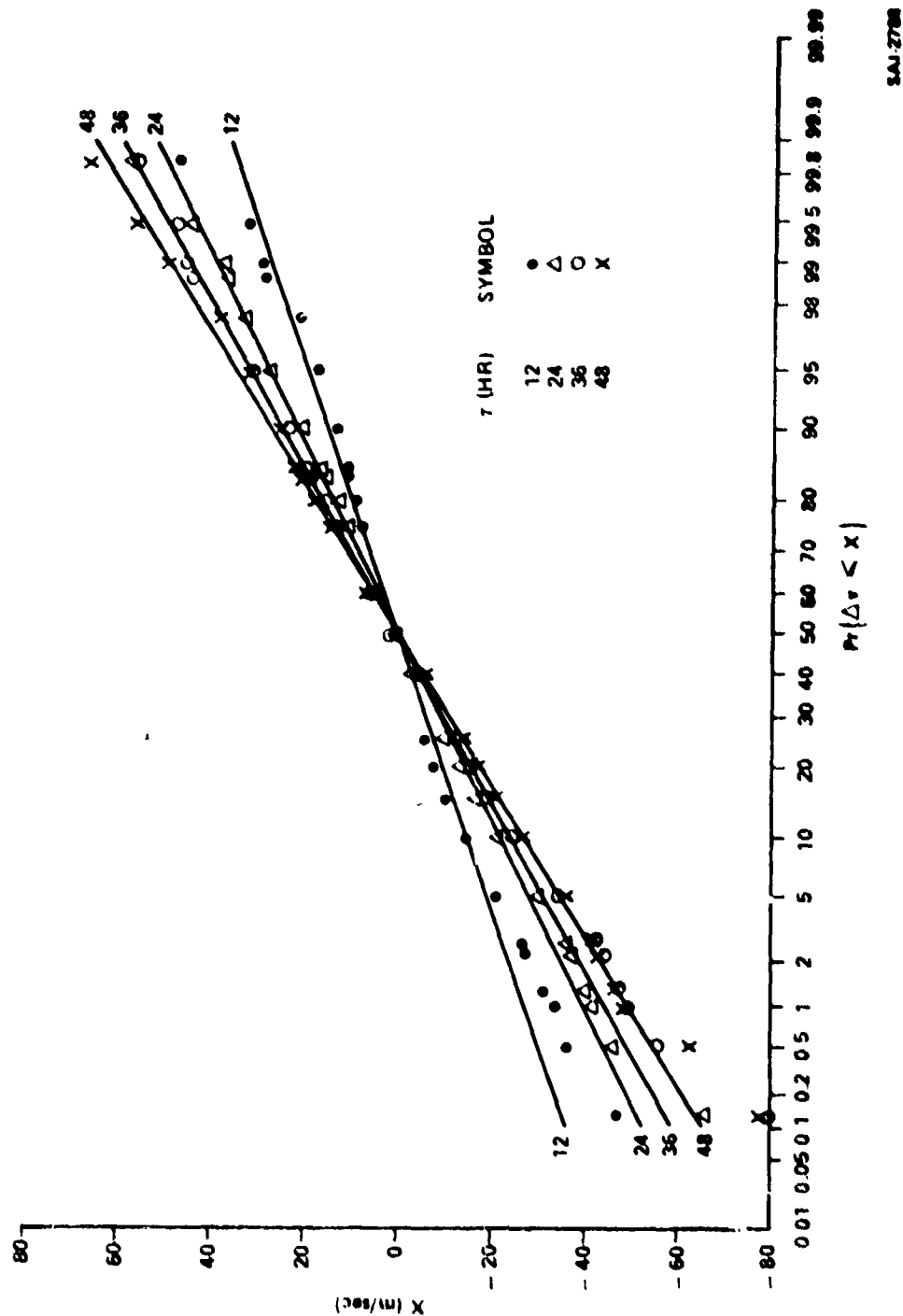


Figure 10. Theoretical (straight lines) and Observed (plotted points) Cumulative Probability Distribution of Meridional Wind Component Change, Δv , with Respect to Time Increment, τ , during January at 12 km at VAFB (1965-74)

C. JOINT DISTRIBUTION OF WIND COMPONENT CHANGES WITH RESPECT TO TIME

The joint distribution of zonal and meridional wind component change with respect to time (Δu and Δv) can be approximated by a bivariate normal distribution. A useful property of such a distribution is that an ellipse can be calculated which contains the end points of a specified percent of vectors having components Δu and Δv . A detailed description of the derivation of probability ellipses and plotting methodology is given by Smith [2]. The five parameters of the bivariate normal distribution of Δu and Δv , calculated for each monthly reference period at VAFB at 1 km altitude intervals from 0 to 27 km are listed in the appendix.

The degree of approximation of the bivariate normal distribution to the observed distribution can be evaluated by comparison of the observed percentage of vectors which are contained within the ellipse to that predicted by the ellipse at a specified probability level. For example, for a sample of 1,000 vectors, 950 of the vectors should terminate within the 95 percent (theoretical $P = .95$) ellipse calculated from the bivariate statistics of the 1,000 vectors; however, a plot of the 1,000 vectors could indicate that only 945 vectors (observed $p = .945$) terminate within the 95 percent ellipse. For illustration on a linear graph comparison of the theoretical to the observed P is given in terms of the parameter λ_e given by

$$\lambda_e = \sqrt{2} \sqrt{-\ln(1-P)} \quad (24)$$

A comparison of theoretical and observed values of λ_e for November, December and January at 12 km for time intervals of 12, 24, 36 and 48 hours is illustrated in Figures 11 through 13. Perfect agreement between theoretical and observed λ_e is represented by a line drawn from the origin with a slope, B , equal to 1. The calculated least squares slopes are given in the figure legend. The plots indicate a tendency for the theoretical λ_e to exceed the observed λ_e for large values of λ_e . The interpretation of this result is that for extreme probabilities the theoretical distributions predict fewer wind change vectors terminating outside the ellipse than is observed. These results may have to be taken into

consideration if engineering application of theoretical wind change statistics beyond the 95 percent level is required.

The 95 percent probability ellipses for the joint distribution of wind component changes with respect to time at 6, 12, 18 and 24 km during November, December and January are illustrated in Figure 14; the relatively small changes with respect to time at 18 and 24 km, the large changes at 12 km and the similarities between the three months are clearly illustrated.

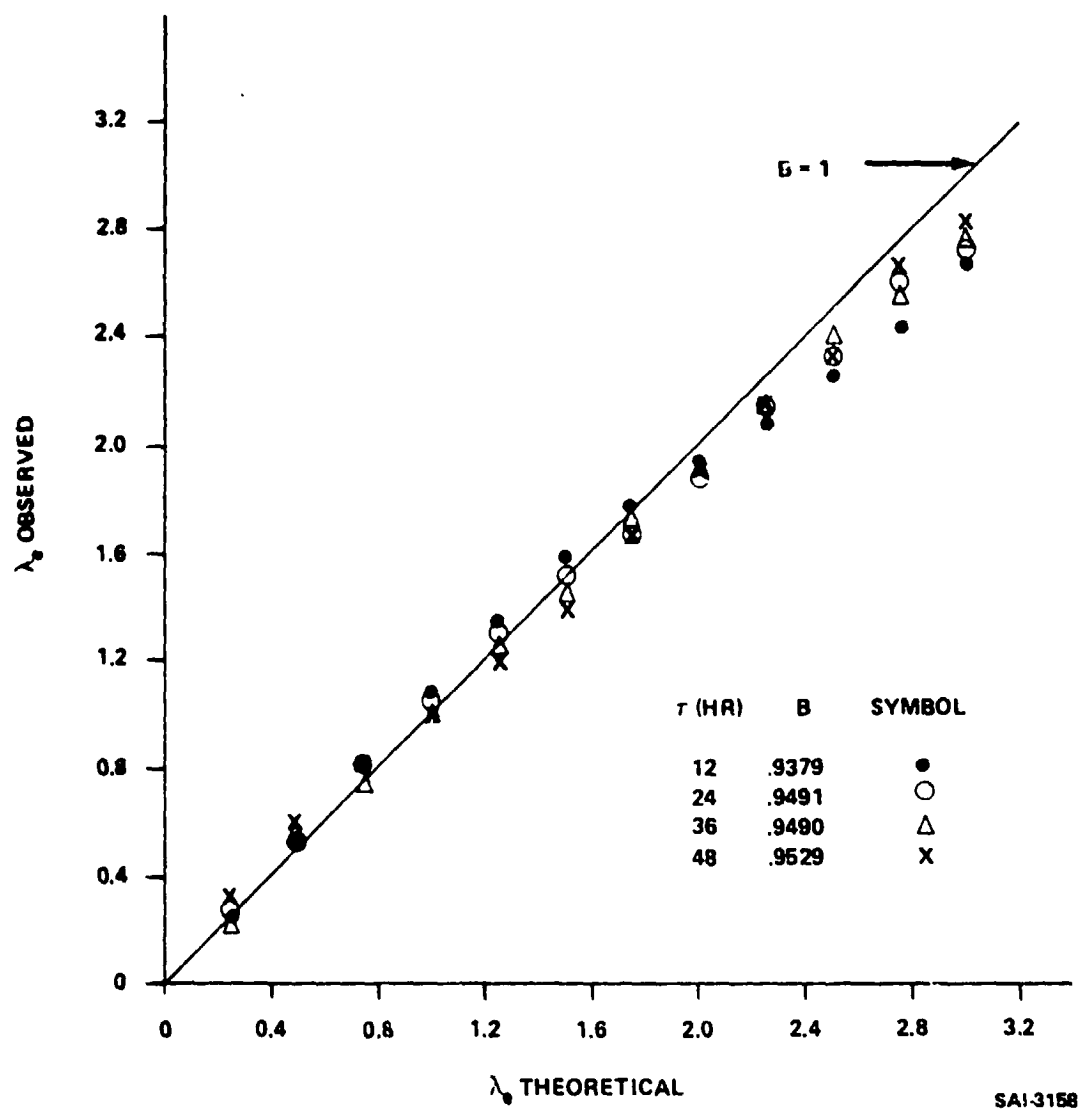


Figure 11. Observed λ_e as a Function of Theoretical λ_e for a Bivariate Normal Distribution of Wind Component Changes (Δu , Δv) with Respect to Time at 12 km During November (1965-74) at VAFB

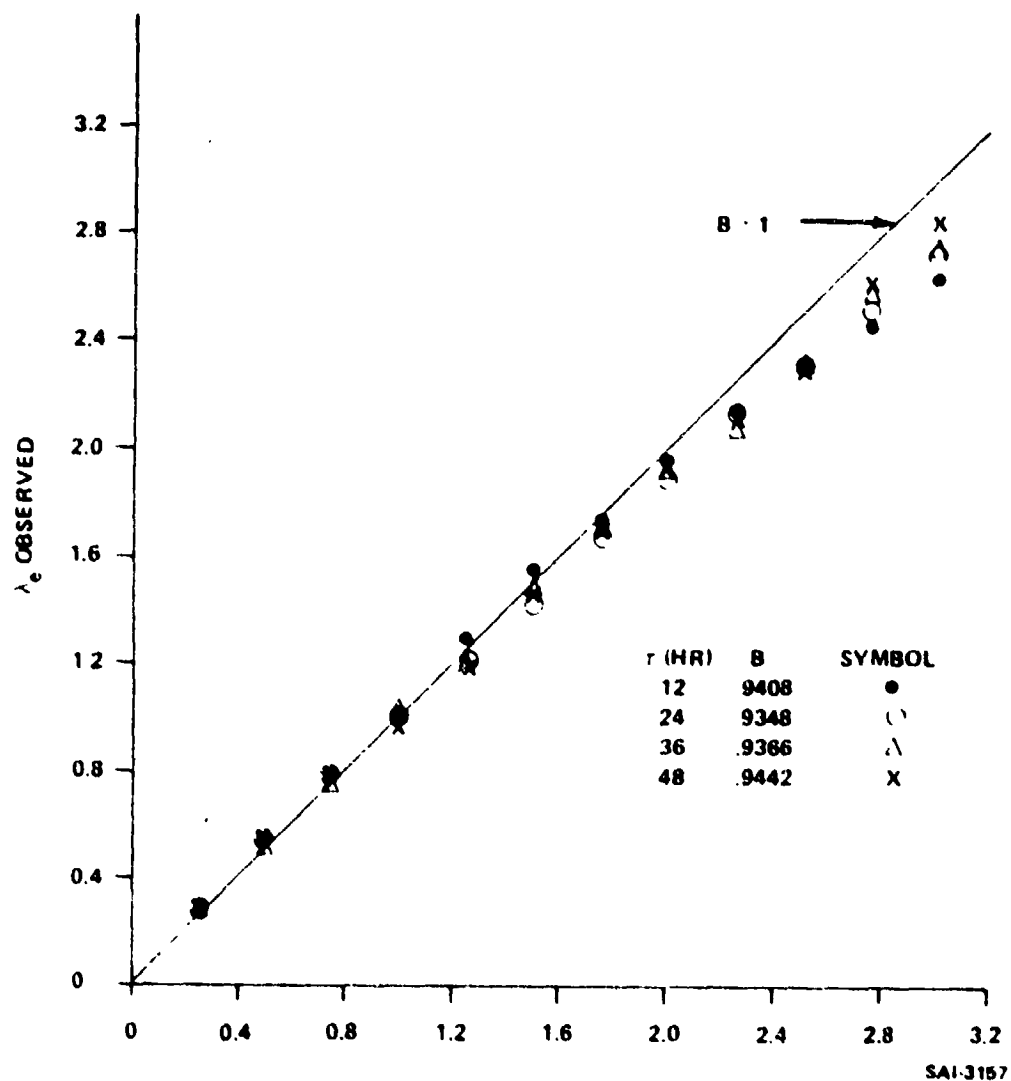
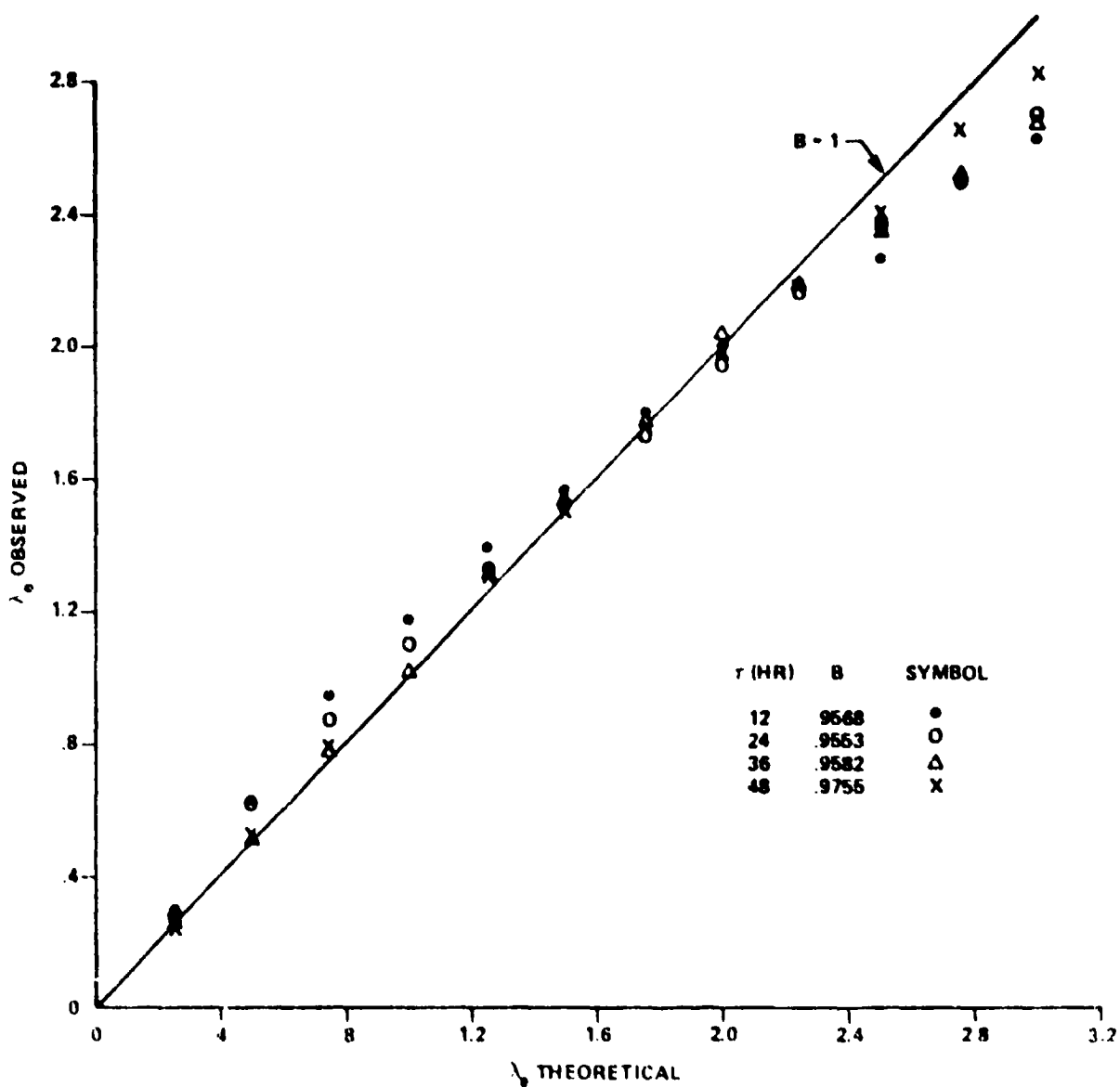


Figure 12. Observed λ_e as a Function of Theoretical λ_e for a Bivariate Normal Distribution of Wind Component Changes (Δu , Δv) with Respect to Time at 12 km During December

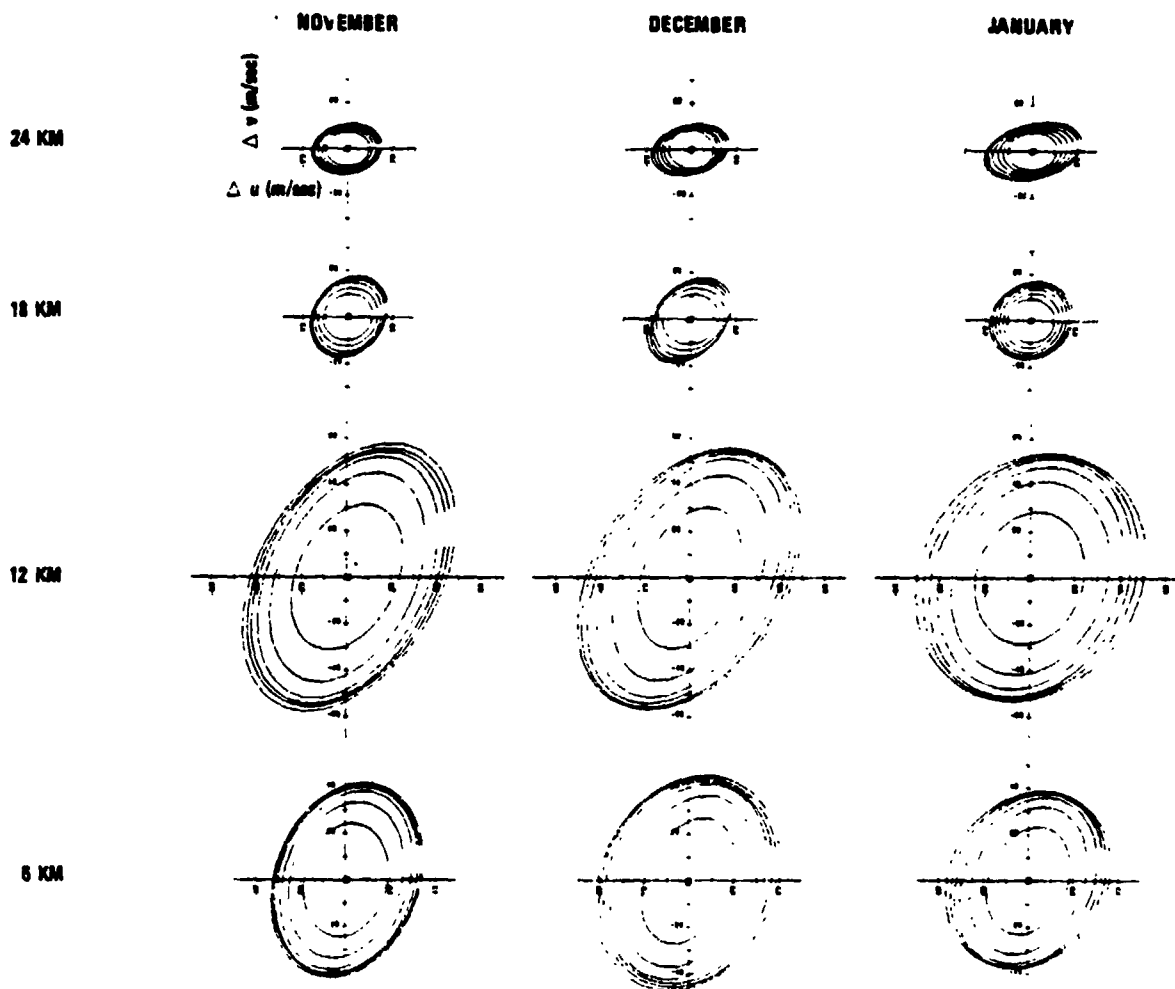


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Figure 13. Observed λ_e as a Function of Theoretical λ_e for a Bivariate Normal Distribution of Wind Component Changes ($\Delta u, \Delta v$) with Respect to Time at 12 km During January (1965-74) at VAFB

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VANDENBERG



THE SIX ELLIPSES FOR EACH ALTITUDE AND MONTH ARE FOR TIME INCREMENTS AT 12-HOUR INTERVALS FROM 12 TO 72 HOURS; THE AREA OF THE ELLIPSES INCREASES WITH INCREASING TIME INTERVAL.

SAI-3847

Figure 14. November, December and January 95 Percent Wind Change Ellipses at 6, 12, 18 and 24 km over Vandenberg AFB

D. MODULUS OF VECTOR WIND CHANGE WITH RESPECT TO TIME

If wind change with respect to time has a distribution which is bivariate normal, the modulus R , of the wind change vector (defined by Equation 6) has a Rayleigh distribution. Since the Rayleigh distribution cannot be integrated in closed form, numerical integration is required to obtain the cumulative probability distribution. Derivation of the Rayleigh distribution, given the five bivariate normal distribution statistics, requires summation involving products of the modified Bessel function of the first kind. Smith [2] summarizes the basic equations for the Rayleigh distribution derived by Wier [4] and extended by Yadavalli [5] to include the condition for correlated variables. The Rayleigh distribution reduces to the integrable classical form, if it is assumed that the components of the vector wind change are independent and that they have zero means and equal standard deviations; the classical Rayleigh probability density function is

$$f(R) = \frac{R}{\sigma^2} \exp(-R^2/2\sigma^2) \quad R \geq 0 \quad (25)$$

Integration of Equation 25 from zero to a specified value of R yields the cumulative probability that $R \leq R^*$ where,

$$\Pr \{R \leq R^*\} = 1 - \exp(-R^2/2\sigma^2) \quad R \geq 0 \quad (26)$$

$$\text{where } \sigma = \sigma_{\Delta u} = \sigma_{\Delta v}$$

Since the standard deviation of the component difference can be expressed as a function of the standard deviation of the components (Equations 22 and 23) it follows that

$$\Pr \{R \leq R^*\} = 1 - \exp \left[-\frac{R^2}{4\sigma_k^2 [1 - \exp(-k)]} \right] \quad (27)$$

where σ_k and k correspond to either σ_u and b or σ_v and C given in Equations 22 and 23.

An expression for R given a particular probability, $\text{Pr} [R \leq R^*]$, is obtained by solution of Equation 27 to obtain

$$R = \sqrt{2} \lambda_e \sigma_k \sqrt{1 - \text{EXP}(-kT)} \quad (28)$$

where λ_e is derived from Equation 24 denoting $\text{Pr} [R \leq R^*]$ by P

The choice of $\sigma_k = \sigma_v$ and $k = c$ (from Equation 23) at 12 km during November, December and January yields the most accurate approximation of the cumulative Rayleigh distribution obtained by numerical integration of Equation 28 in Reference 1. Comparisons of the 99, 95, and 50 percentile modulus of the wind change vector with respect to time based on the Rayleigh (Equation 28, Reference 1) and the classical Rayleigh (Equation 27) are illustrated in Figures 15, 16 and 17; the rather good agreement between the distributions for time intervals from 12 to 72 hours is attributable to the accuracy of the simplifying assumptions described above. There is a slight tendency, especially for time intervals ≤ 36 hours for the classical Rayleigh to be larger than the Rayleigh.

The remaining question is: How well do these theoretical distributions compare with observed distributions? Comparisons of observed and theoretical values of R for time intervals of 12, 24, 36 and 48 hours at 12 km during November, December and January at VAFB are given in Tables 5 through 7; column II of the tables contains R calculated according to the classical Rayleigh distribution with σ equal to the monthly value of σ_v at 12 km and k equal to the decay constant, c, in the monthly exponential least squares fit to the v component autocorrelation function (Equation 23); Column I was obtained by numerical integration of the Rayleigh distribution. It is indicated that the observed cumulative distribution agrees fairly well with the theoretical distribution for probabilities less than .95 to .97. For large probabilities, there is a consistent tendency for the theoretical distribution to underestimate the observed distribution. This tendency is attributable to the small sample of data available at the extreme probabilities and errors in the Rawinsonde data.

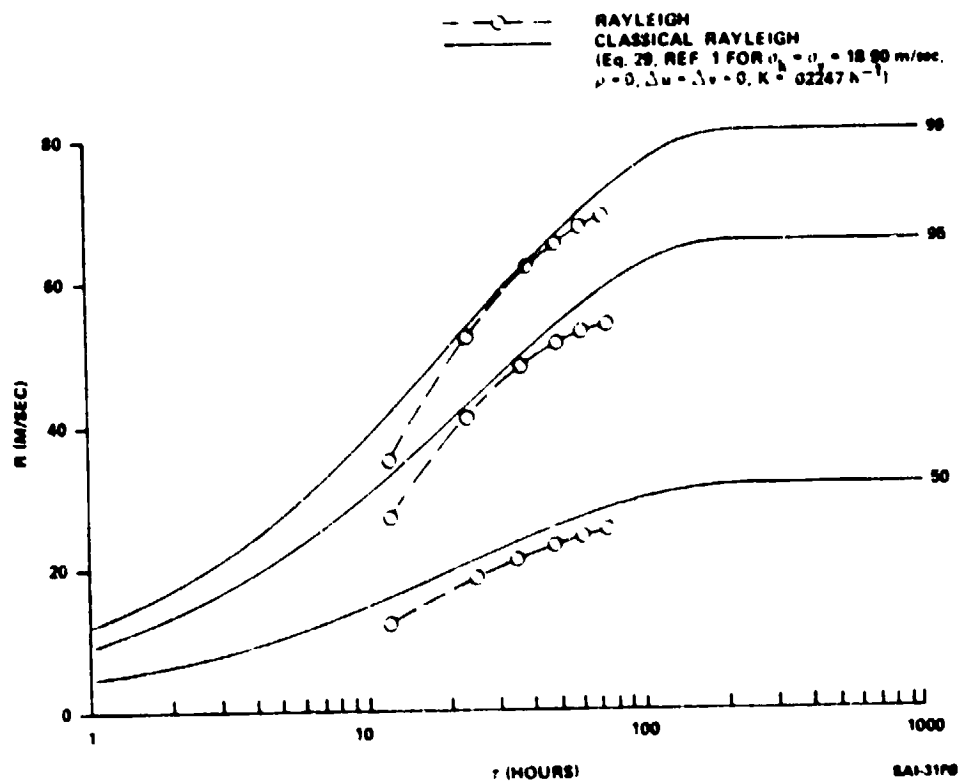


Figure 15. November Theoretical Percentiles of Modulus, R, of Vector Wind Change with Respect to Time Interval (τ) at 12 km over VAFB (1965-74)

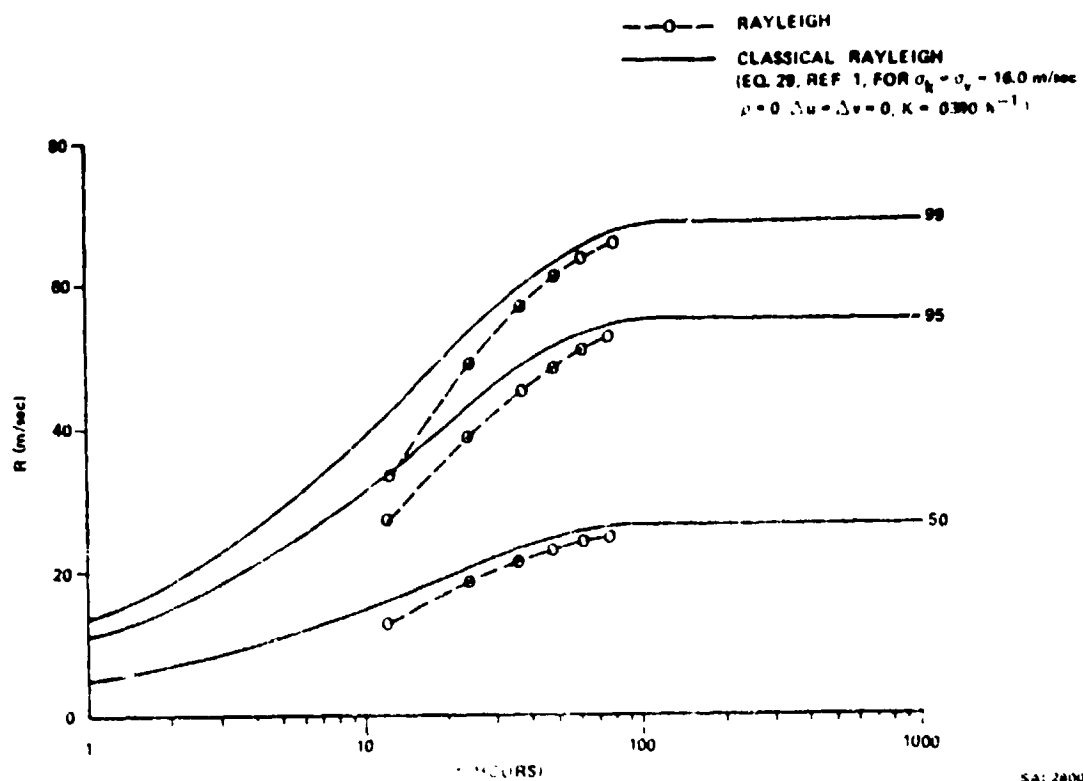


Figure 16. December Theoretical Percentiles of Modulus, R , of Vector
 Wind Change with Respect to Time Interval, T , at 11.5°
 over 1975 (1965-74)

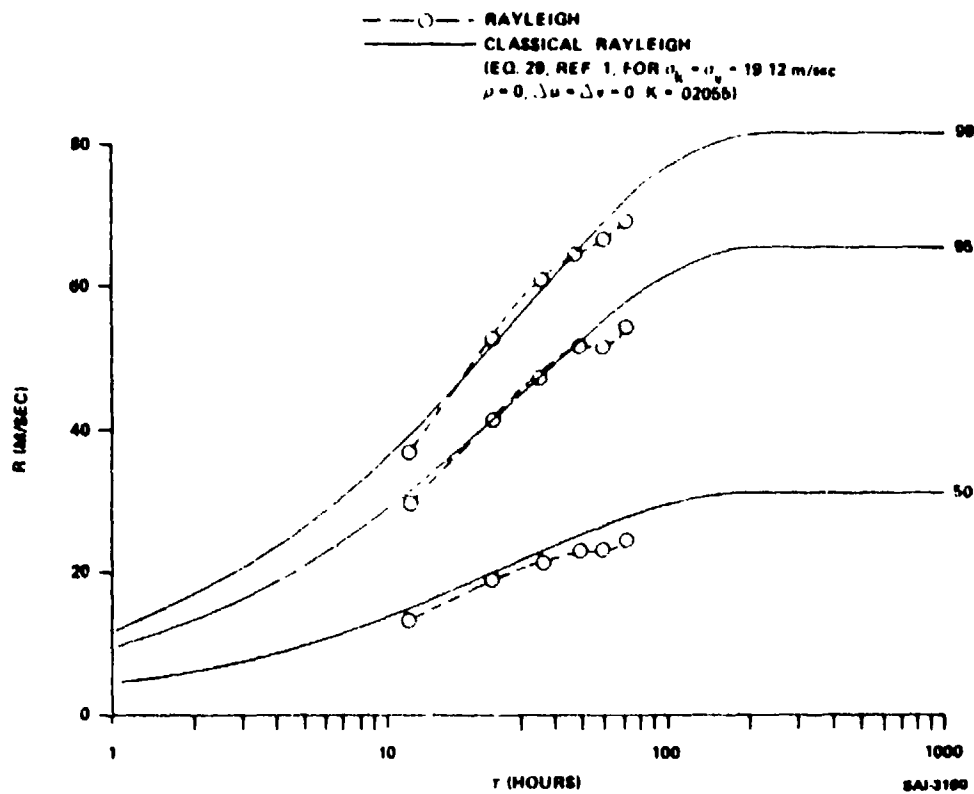


Figure 17. January Theoretical Percentiles of Modulus, R , of Vector Wind Change with Respect to Time Interval (τ) at 12 km Over VAFB (1965-74)

Table 5. Theoretical and Observed Modulus, R, of Vector Wind Change with Respect to Time at 12 km during November (1965-74) at VAFB

r (HOURS)	12			24			36			48		
	I	II	OBSERVED	I	II	OBSERVED	I	II	OBSERVED	I	II	OBSERVED
50	13.23	14.88	11.78	18.72	19.87	18.17	21.59	23.02	20.91	22.88	25.21	21.96
60	15.29	17.11	13.58	21.68	22.84	20.95	24.98	26.47	24.28	26.48	28.99	26.80
75	18.99	21.05	17.78	26.99	28.09	25.82	31.16	32.55	30.83	32.96	36.68	32.58
80	20.57	22.68	19.69	29.28	30.27	28.89	33.79	35.08	33.14	35.73	38.42	35.50
84134	22.10	24.26	21.69	31.49	32.37	31.23	36.38	37.52	35.48	38.48	41.09	39.07
850	22.47	24.82	22.29	32.01	32.88	31.90	33.98	38.08	36.00	39.08	41.71	39.35
900	24.95	27.13	25.83	35.63	36.71	34.62	41.13	41.96	40.40	43.50	45.94	43.62
95	28.84	30.94	31.00	41.29	41.30	43.50	47.76	47.86	47.86	50.42	52.41	52.25
97502	32.39	34.34	37.20	46.47	46.83	50.25	53.78	53.11	57.51	56.73	58.17	59.51
97725	32.84	34.77	37.47	41.12	46.41	50.59	54.55	53.78	58.17	57.54	58.90	61.12
98734	35.81	37.37	42.10	51.15	49.88	59.40	59.22	57.80	67.40	62.48	63.30	65.40
99	38.67	38.36	42.50	52.71	51.20	62.00	61.02	59.33	71.00	64.35	64.96	68.00
995	39.87	41.15	43.50	57.07	54.92	65.00	66.10	63.64	76.50	69.88	69.70	76.00

COLUMN I CALCULATIONS OF R BASED ON EQS. 28a AND 28b OF REF. 1 AND NUMERICAL INTEGRATION OF THE RAYLEIGH PROBABILITY DENSITY FUNCTION

COLUMN II CALCULATIONS OF R BASED ON EQ. 29 OF THIS TEXT AND ASSUMING $u = v_0 = 19.12 \text{ m/sec}$, $K = C = 0.2055 \text{ hr}^{-1}$ AND $\Delta u = \Delta v = 0$

SAI 3128

Table 6. Theoretical and Observed Modulus, R, of Vector Wind Change with Respect to Time at 12 km during December (1965-74) at VAFB

r (HOURS)	12			24			36			48		
	I	II	OBSERVED	I	II	OBSERVED	I	II	OBSERVED	I	II	OBSERVED
50	12.84	15.30	11.61	18.36	20.32	17.93	21.67	23.44	20.80	23.27	25.87	22.82
60	14.62	17.59	13.35	21.26	23.36	21.20	25.09	26.95	25.02	26.82	29.39	26.28
75	18.19	21.64	16.98	26.56	28.73	26.37	31.32	33.15	30.88	33.54	36.15	33.29
80	19.71	23.31	18.84	28.82	30.96	28.73	33.98	35.71	33.56	36.36	38.98	36.93
84134	21.20	24.93	20.72	31.04	33.11	30.78	36.58	38.20	37.57	39.12	41.68	38.10
850	21.56	25.31	21.17	31.57	33.61	31.48	37.19	38.78	38.13	39.77	42.29	39.39
900	23.96	27.89	24.45	35.19	37.03	35.60	41.44	42.72	42.32	44.26	46.09	44.72
95	27.75	31.81	28.16	40.87	42.24	41.28	48.09	48.73	49.08	51.29	53.16	54.28
97502	31.20	35.30	32.83	46.06	46.88	48.42	54.17	54.08	54.66	57.71	58.28	60.42
97725	31.65	35.74	34.02	46.74	47.47	48.78	54.95	54.76	56.02	58.54	59.73	60.76
98734	34.31	38.41	37.21	50.78	51.01	54.11	59.69	58.65	62.23	63.53	64.19	64.23
99	35.37	39.44	40.88	53.34	52.37	54.93	61.51	60.41	64.43	65.48	65.90	65.88
995	38.29	42.30	43.93	56.72	55.17	60.48	66.64	64.80	70.93	70.88	70.68	73.93

COLUMN I CALCULATIONS OF R BASED ON EQS. 28a AND 28b OF REF. 1 AND NUMERICAL INTEGRATION OF THE RAYLEIGH PROBABILITY DENSITY FUNCTION

COLUMN II CALCULATIONS OF R BASED ON EQ. 29 OF THIS TEXT AND ASSUMING $u = v_0 = 18.90 \text{ m/sec}$, $K = C = 0.2247 \text{ hr}^{-1}$ AND $\Delta u = \Delta v = 0$

SAI 3128

Table 7. Theoretical and Observed Modulus, R, of Vector Wind change with Respect to Time at 12 km during January (1965-74) at VAFB

HOURS	12			24			36			48		
	I	II	OBSERVED	I	II	OBSERVED	I	II	OBSERVED	I	II	OBSERVED
50	12.69	16.21	10.90	18.39	20.69	16.85	21.30	23.08	20.20	23.00	24.46	22.48
60	14.61	18.63	13.17	21.18	23.79	19.78	24.64	26.63	23.36	26.49	28.13	26.88
76	18.01	22.92	17.33	26.14	29.27	25.92	30.29	32.64	29.60	32.70	34.60	33.13
90	19.44	24.70	18.81	28.22	31.53	28.69	32.70	35.17	31.53	35.29	37.28	35.43
84134	20.81	26.43	20.40	30.23	33.73	31.18	35.02	37.61	33.96	37.81	39.87	37.69
850	21.13	26.81	20.79	30.70	34.24	31.78	35.68	38.18	35.14	38.40	40.47	38.00
900	23.34	29.64	24.12	33.92	37.72	35.10	39.32	42.06	39.75	42.42	44.59	42.17
96	26.72	33.69	29.75	38.88	43.02	40.50	45.07	47.98	47.50	48.63	50.86	47.86
97602	29.78	37.39	33.51	43.37	47.76	45.38	50.21	53.25	52.26	54.21	56.44	55.17
97725	30.14	37.86	34.46	43.93	48.35	45.72	50.93	53.82	52.95	54.92	57.15	55.63
98734	32.50	40.69	40.08	47.40	51.96	50.15	54.95	57.94	57.15	59.25	61.42	60.16
99	33.40	41.77	40.90	48.74	53.34	51.80	56.51	59.49	62.80	60.91	63.06	61.40
995	35.92	44.81	45.90	52.50	57.21	60.90	60.87	63.81	64.90	65.62	67.63	73.90

COLUMN I CALCULATIONS OF R BASED ON EQS 26a AND 26b OF REF 1 AND NUMERICAL INTEGRATION OF THE RAYLEIGH PROBABILITY DENSITY FUNCTION

COLUMN II CALCULATIONS OF R BASED ON EQ 29 OF THIS TEXT AND ASSUMING $\sigma = \sigma_y = 16.01$ m sec, $R - C = 0.5845$ hr⁻¹ AND $\Delta u = \Delta v = 0$

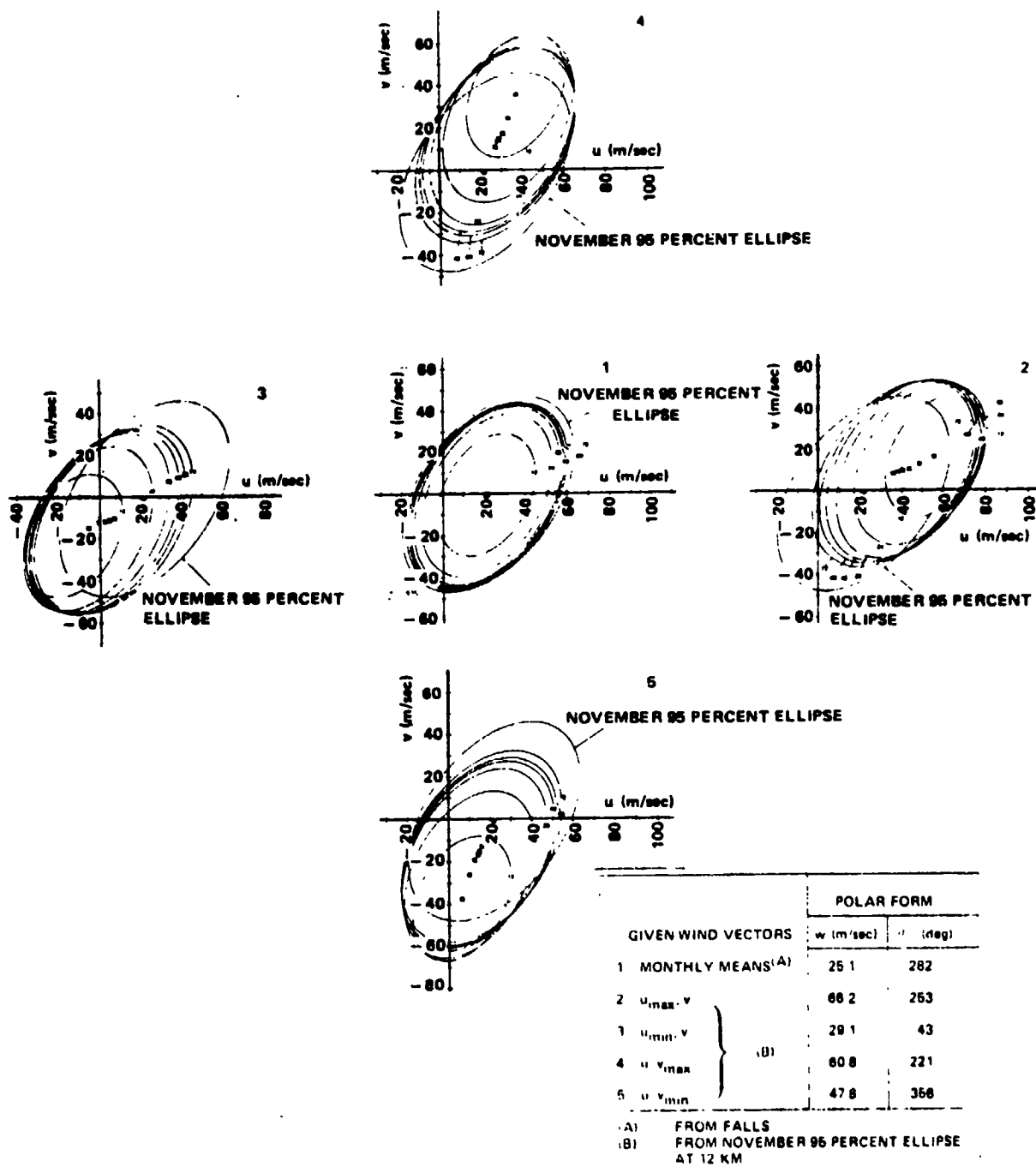
SAI 312

F. CONDITIONAL VECTOR WIND ELLIPSES

Prior knowledge that environmental constraints necessary to assure the success of a space vehicle launch will be satisfied implies that there is a capability for prediction of environmental parameters; the prediction can be based on knowledge of conditions prior to launch. With regard to winds aloft, prior conditions are typically based on Rawinsonde or Jimsphere wind profiles. A typical question that could be posed before launch is: Given a measurement of the wind vector 12 hours prior to launch at 12 km, will the wind vector at launch time be within 95 percent reference month wind ellipse? A question of this type can be answered if the distribution of vector wind components at an initial time, T_0 , and at a future time, T_1 , can be approximated by a quadrivariate normal distribution. Given the components of the vector at T_0 , the conditional distribution of the vector wind at T_1 is bivariate normal. Smith [1] describes the derivation of the conditional bivariate normal distribution and documents the computer program used in this investigation for calculation of these distributions. Figures 18 thru 20 illustrate the 95 percent conditional bivariate normal distributions at 12 km that have been calculated for time increments of 12, 24, 36, 48, 60 and 72 hours for the months of November, December and January. Five vectors were selected as given initial conditions for calculations of the conditional ellipses. The components of the vectors are defined below:

1. Monthly component means given by falls [3].
2. Maximum zonal wind and the corresponding meridional wind from the monthly 95 percent vector wind ellipse.
3. Minimum zonal wind and the corresponding meridional wind from the monthly 95 percent vector wind ellipse.
4. Maximum meridional wind and the corresponding zonal wind from the monthly 95 percent vector wind ellipse.
5. Minimum meridional wind and the corresponding zonal wind from the monthly 95 percent vector wind ellipse.

The given vectors are specified in the inset of Figures 18 through 20 (polar form, at 12 km) and in Tables 8 through 10 (component form, at 1, 6, 12, 18 and 24 km).

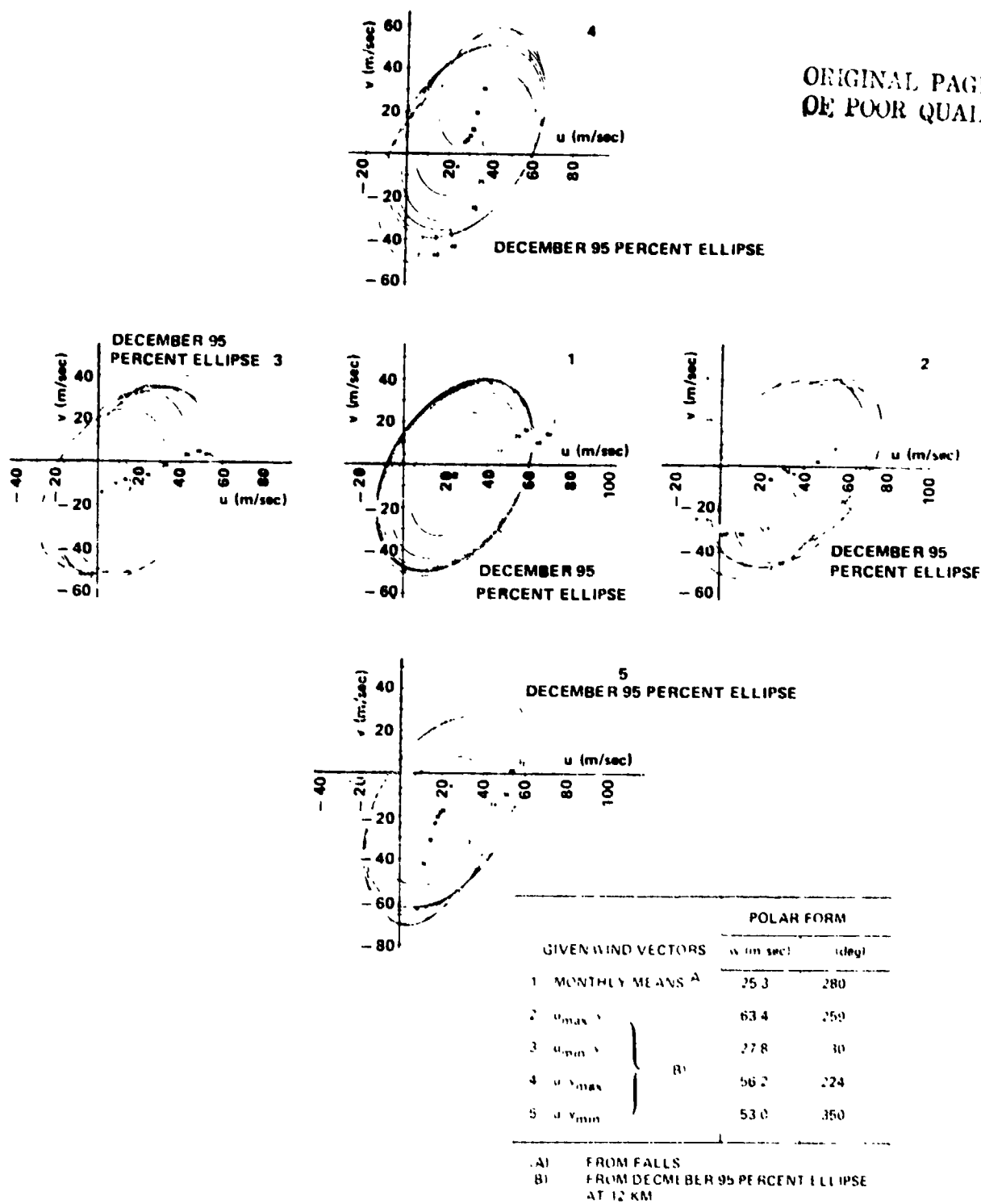


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Figure 18. November Conditional 95 Percent Wind Ellipses at 12 km for Time Increments of 12, 24, 36, 48, 60, and 72 Hours at VAFB (1965-74)

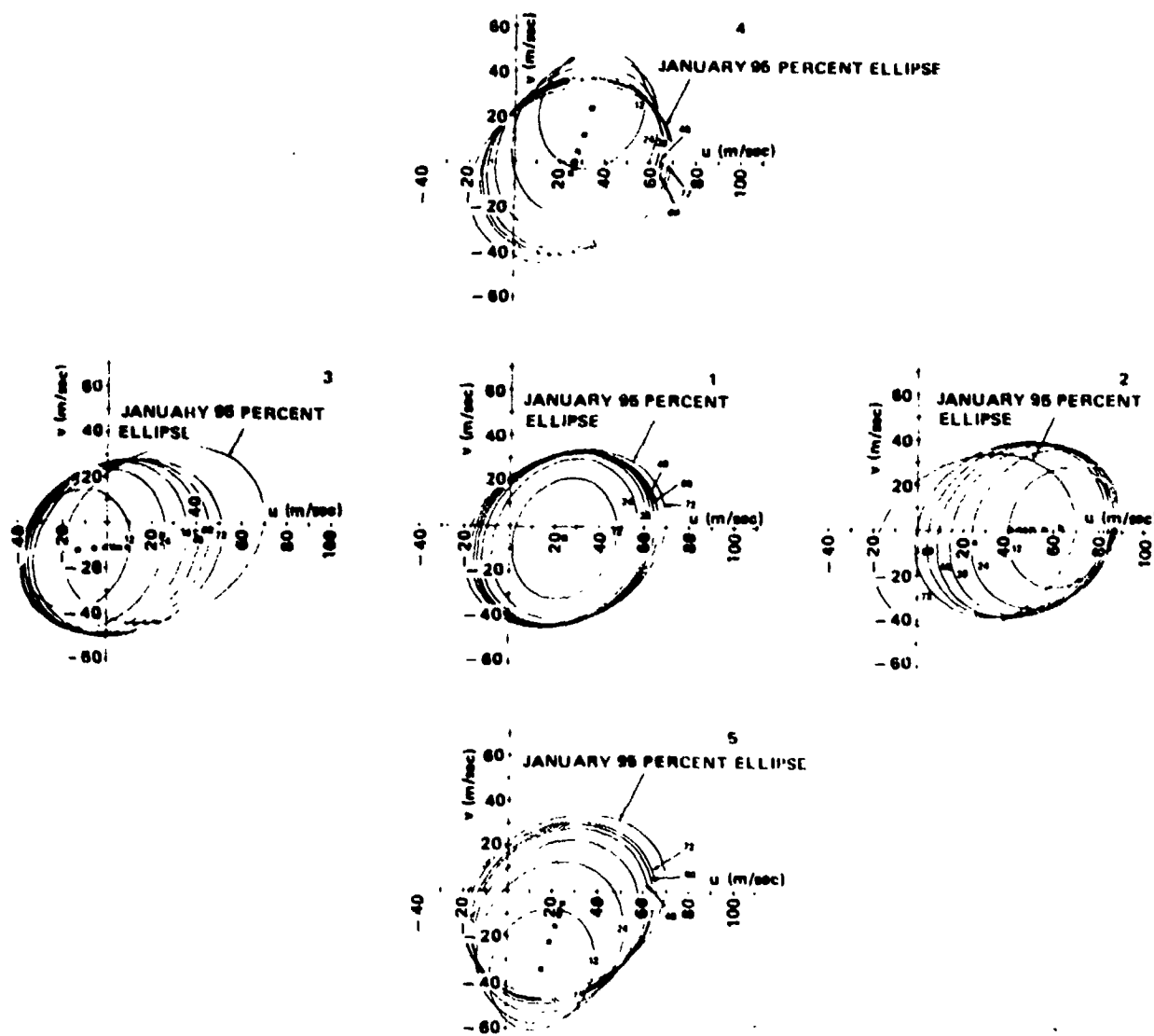
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Figure 19. December Conditional 95 Percent Wind Ellipses at 12 km for Time Increments of 12, 24, 36, 48, 60 and 72 Hours at VAFB (1965-74)



GIVEN WIND VECTORS		POLAR FORM	
		w, m/sec	(deg)
1. MONTHLY MEANS (A)		21.2	170
2. " " " "		30.1	267
3. " " " "		24.2	56
4. " " " "	(B)	56.7	224
5. " " " "		47.0	141
(A) FROM TABLE			
(B) FROM JANUARY 95 PERCENT ELLIPSE			
AT 12 KM			

Figure 20. January Conditional 95 Percent Wind Ellipses at 12 km for Time Increments of 12, 24, 36, 48, 60 and 72 Hours at VAFB (1965-74)

The conditional ellipses illustrated at the center of Figures 18 through 20 show that if the observed wind vector has components equivalent to the monthly mean components (condition 1) then 95 percent of the wind vectors after elapsed times as large as 72 hours will fall within the monthly 95 percent ellipse. Therefore, satisfaction of a launch constraint which states that the wind vector must be included within the 95 percent monthly ellipse would be assured for periods as long as 72 hours following an observation of a wind vector having components which correspond to the monthly means. The conditional ellipses based on selection of given wind vectors that terminate on the monthly 95 percent ellipse (conditions 2 through 5) have a significant proportion of their area lying outside the monthly 95 percent ellipse; as the time increment increases this proportion decreases but remains significant for a time increment as large as 72 hours. This implies that a significant proportion of wind vectors will not satisfy a launch constraint based on the 95 percent wind ellipse for periods as long as 72 hours (or longer if these calculations are extended) following an observation of a wind vector which terminates on the 95 percent ellipse.

The wind direction characteristics of a wind ellipse can be described in terms of the angles associated with wind vectors constructed between the origin and the center of the ellipse (at the component means) and between the origin and the two tangent positions to the ellipse. The three vectors constructed in this manner and the angles θ_A , θ_B , θ_E and $\Delta\theta$ are illustrated in Figure 21, the range of wind angles, θ_R , is θ_A to θ_B . The angles θ_R , θ_E , $\Delta\theta$ calculated from five 95 percent conditional ellipses for November, December and January at 1, 6, 12, 18 and 24 km are listed in Tables 8 through 10.

Table 8. Wind Direction (Degrees) Characteristics of 95 Percent Conditional Wind Ellipses at VAFB during November (1965-74) for an Elapsed Time (τ) of 12 hours

CONDITION(*)	ALTITUDE (km)	θ_0	θ_A	θ_R	$\Delta\theta$
1	1	341	.	.	.
	6	277	.	.	.
	12	271	.	.	.
	18	272	.	.	.
	24	283	.	.	.
2	1	274	.	.	.
	6	257	225	297	72
	12	254	231	286	55
	18	259	234	285	51
	24	268	250	287	37
3	1	67	.	.	.
	6	43	.	.	.
	12	34	.	.	.
	18	27	.	.	.
	24	76	32	109	77
4	1	171	.	.	.
	6	213	171	268	97
	12	226	202	259	57
	18	233	184	268	74
	24	250	.	.	.
5	1	349	295	34	99
	6	342	286	22	98
	12	351	284	24	80
	18	334	284	26	102
	24	381	.	.	.

* 95 PERCENT CONDITIONAL ELLIPSE COVERS ALL QUADRANTS.
 (*) THE FIVE CONDITIONAL DISTRIBUTIONS AT EACH ALTITUDE ARE BASED ON THE FIVE GIVEN WIND VECTORS LISTED BELOW. CONDITION 1 IS BASED ON MONTHLY MEAN WIND COMPONENTS CALCULATED BY FALLS (3). CONDITIONS 2 THRU 5 ARE FROM THE 95 PERCENT VECTOR WIND ELLIPSES AT THE INDICATED ALTITUDES THAT WERE CALCULATED FROM TWICE DAILY RAWINSONDE DATA DURING THE PERIOD 1965-1974

ALTITUDE (km)	CONDITIONS									
	1		2		3		4		5	
	u	v	u _{max}	v	u _{min}	v	u	v _{max}	u	v _{min}
1	0.25	-0.70	9.80	-3.30	-8.96	0.94	-0.76	15.69	1.60	-18.05
6	10.89	-1.07	40.44	6.38	-16.74	-9.42	18.63	31.76	5.07	-34.82
12	21.15	-0.11	63.25	19.60	-19.77	-21.40	39.92	45.90	3.56	-47.70
18	8.45	-0.95	24.96	3.52	-6.72	-5.10	14.07	12.99	4.17	-14.57
24	3.27	-1.46	24.22	8.55	-14.66	-3.19	9.29	6.73	0.27	-9.37

SAI 3294

Table 9. Wind Direction (Degrees) Characteristics of 95 Percent Conditional Wind Ellipses at VAFB during December (1965-74) for an Elapsed Time (τ) of 12 hours

CONDITION (*)	ALTITUDE (km)	θ	A	B	AO
1	1	331	.	.	.
	6	290	.	.	.
	12	280	225	351	126
	18	280	.	.	.
	24	357	.	.	.
2	1	273	.	.	.
	6	265	233	309	76
	12	261	237	294	57
	18	257	231	285	54
	24	272	243	302	59
3	1	43	.	.	.
	6	30	.	.	.
	12	18	.	.	.
	18	13	.	.	.
	24	74	44	98	54
4	1	172	.	.	.
	6	217	.	.	.
	12	230	206	267	61
	18	240	208	272	64
	24	244	.	.	.
5	1	346	287	27	100
	6	337	288	9	81
	12	345	301	12	71
	18	350	299	34	96
	24	29	.	.	.

* 95 PERCENT CONDITIONAL ELLIPSE COVERS ALL QUADRANTS
 (*) THE FIVE CONDITIONAL DISTRIBUTIONS AT EACH ALTITUDE ARE BASED ON THE FIVE GIVEN WIND VECTORS LISTED BELOW. CONDITION 1 IS BASED ON MONTHLY MEAN WIND COMPONENTS CALCULATED BY FALLS (3). CONDITIONS 2 THRU 5 ARE FROM THE 95 PERCENT VECTOR WIND ELLIPSES AT THE INDICATED ALTITUDES THAT WERE CALCULATED FROM TWICE DAILY RAWINSOON DATA DURING THE PERIOD 1965-1974

ALTITUDE (km)	CONDITIONS									
	1		2		3		4		5	
	u	v	u _{max}	v	u _{min}	v	u	v _{max}	u	v _{min}
1	1.39	- 2.33	12.09	- 3.83	- 9.55	1.43	0.55	15.28	1.99	- 2.05
6	14.63	- 5.17	44.45	- 2.49	- 15.87	- 13.91	21.12	30.49	7.46	- 4.19
12	24.91	- 4.36	62.20	- 12.21	- 13.88	- 24.09	39.09	40.12	9.23	- 52.20
18	10.21	- 1.66	25.98	- 5.14	- 6.96	9.74	17.41	13.22	1.61	- 17.80
24	0.13	- 2.79	18.42	- 0.95	- 19.32	4.60	3.58	5.77	- 4.48	- 11.30

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Table 10. Wind Direction (Degrees) Characteristics of 95 Percent Conditional Wind Ellipses at VAFB during January (1965-74) an Elapsed Time (:) of 12 Hours

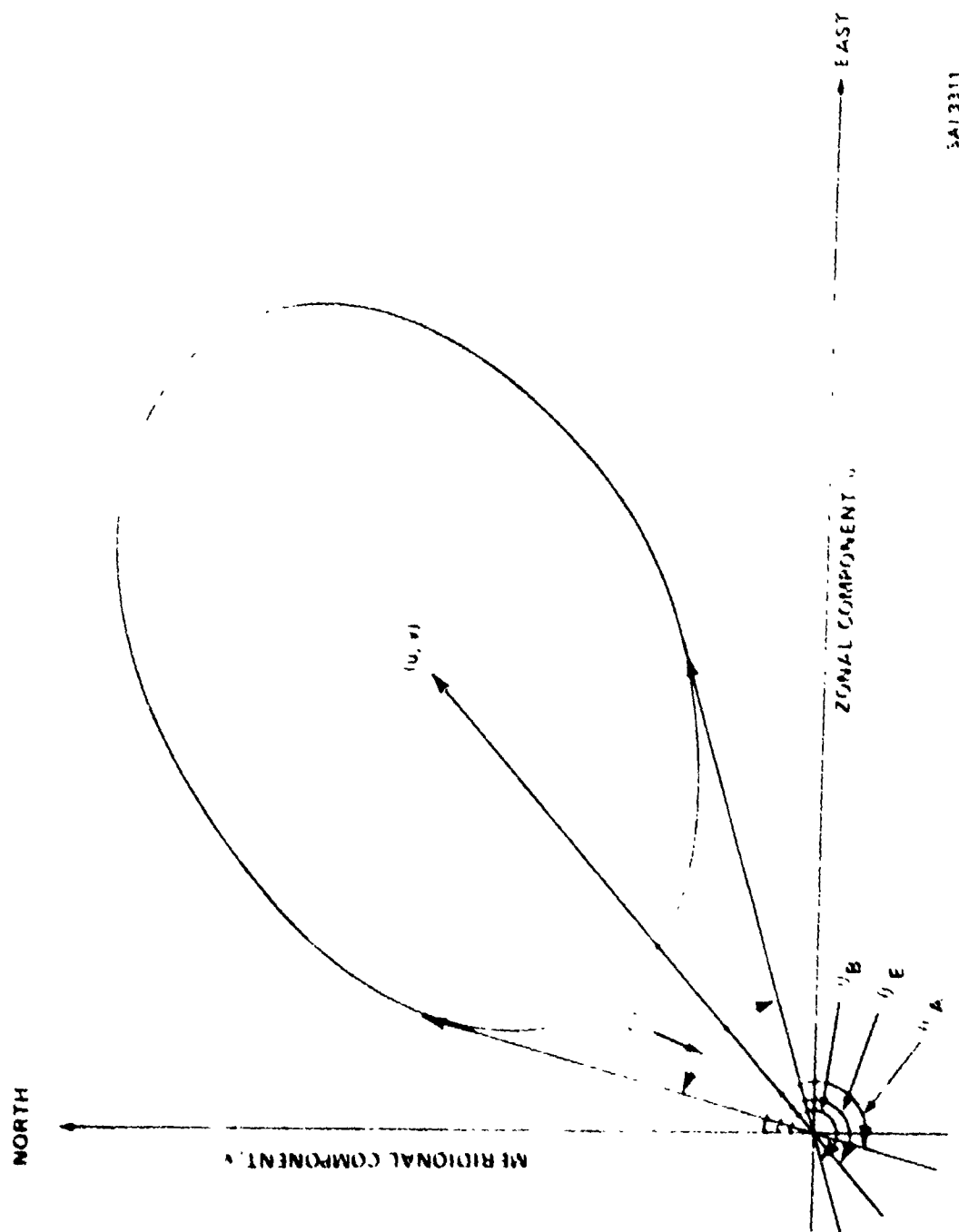
CONDITION (*)	ALTITUDE (km)	θ_0	θ_A	θ_B	θ_1
1	1	329	.	.	.
	6	286	.	.	.
	12	282	217	354	137
	18	287	.	.	.
	24	20	.	.	.
2	1	252	.	.	.
	6	261	233	236	63
	12	268	246	294	48
	18	265	244	287	43
	24	268	243	295	52
3	1	42	.	.	.
	6	43	.	.	.
	12	47	.	.	.
	18	26	.	.	.
	24	73	52	93	41
4	1	279	.	.	.
	6	224	.	.	.
	12	236	203	276	73
	18	244	207	277	70
	24	236	.	.	.
5	1	350	292	37	105
	6	340	285	19	94
	12	335	289	13	84
	18	338	297	22	85
	24	43	.	.	.

* 95 PERCENT CONDITIONAL ELLIPSE COVERS ALL QUADRANTS

(*) THE FIVE CONDITIONAL DISTRIBUTIONS AT EACH ALTITUDE ARE BASED ON THE FIVE GIVEN WIND VECTORS LISTED BELOW. CONDITION 1 IS BASED ON MONTHLY MEAN WIND COMPONENTS CALCULATED BY FALLOUT. CONDITIONS 2 THROUGH 5 ARE FROM THE 95 PERCENT VECTOR WIND ELLIPSES AT THE INDICATED ALTITUDES THAT WERE CALCULATED FROM TWICE DAILY RAWINSONDE DATA DURING THE PERIOD 1965-1974

ALTITUDE (km)	CONDITIONS									
	1		2		3		4		5	
	u	v	u _{max}	v _{max}	u _{min}	v _{min}	u	v _{max}	u	v _{min}
1	0.91	1.66	11.79	-0.85	9.54	2.25	15.1	15.76	0.65	18.86
6	12.22	3.34	43.64	4.61	17.80	11.89	21.39	26.27	4.45	33.55
12	24.60	5.11	69.98	3.37	19.80	13.89	34.97	33.93	15.21	44.45
18	1.02	1.10	27.12	1.41	17.20	17.27	15.53	10.29	2.29	16.15
24	0.89	2.89	21.27	-0.81	-24.17	6.49	6.68	7.17	9.58	13.05

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Figure 21. Wind Direction Characteristics of a Vector Wind Probability Ellipse

F. YEAR TO YEAR VARIABILITY

Artificial wind profiles that are constructed using reference month statistics, such as those based on an eight-year sample given by Falls [3], have been used for development of wind bias programs for launch vehicles. It is of interest to study how realistic these reference month statistics are when compared with data from individual months.

A comparison of individual monthly means to reference month means given by Falls [3] is illustrated in Figures 22 and 23 for the zonal and meridional component, respectively. The reference month means are illustrated as a repeating function. The distribution of deviations of zonal and meridional wind components from the reference month means illustrated in Figures 22 and 23 can be treated as having a normal distribution. The distribution of the deviations during the period 1965-74 are illustrated in Figure 24; the straight lines represent normal distributions and the plotted symbols represent the observed distribution. It is indicated that 10 percent of the monthly means at 12 km have an absolute difference of more than 8.5 m/sec from the reference month means.

Another indicator of the year to year variability is the variability of the bivariate normal statistics of the vector wind. These statistics at 12 km for any months during the period 1965-74 are listed in Table 11. To illustrate the variability, the 95 percent probability ellipse for the wind at 12 km during November 1965 and 1969 are shown in Figure 25.

The variability of the wind statistics from year to year described above supports the conclusion that the reference month statistics based on a relatively long data sample do not necessarily provide an accurate estimate of the conditions during a particular month. If wind biasing is to be required for reduction of wind loading on the Space Shuttle, the utilization of an artificial wind profile composed of reference month sampling period winds may not yield the desired results. It is recommended that pre-launch wind bias models be based on sets of wind profiles that represent the range of year to year variability indicated herein. In an operational sense, the greatest reduction of in-flight loads would be achieved by wind biasing with respect to a wind profile measurement taken prior to launch.

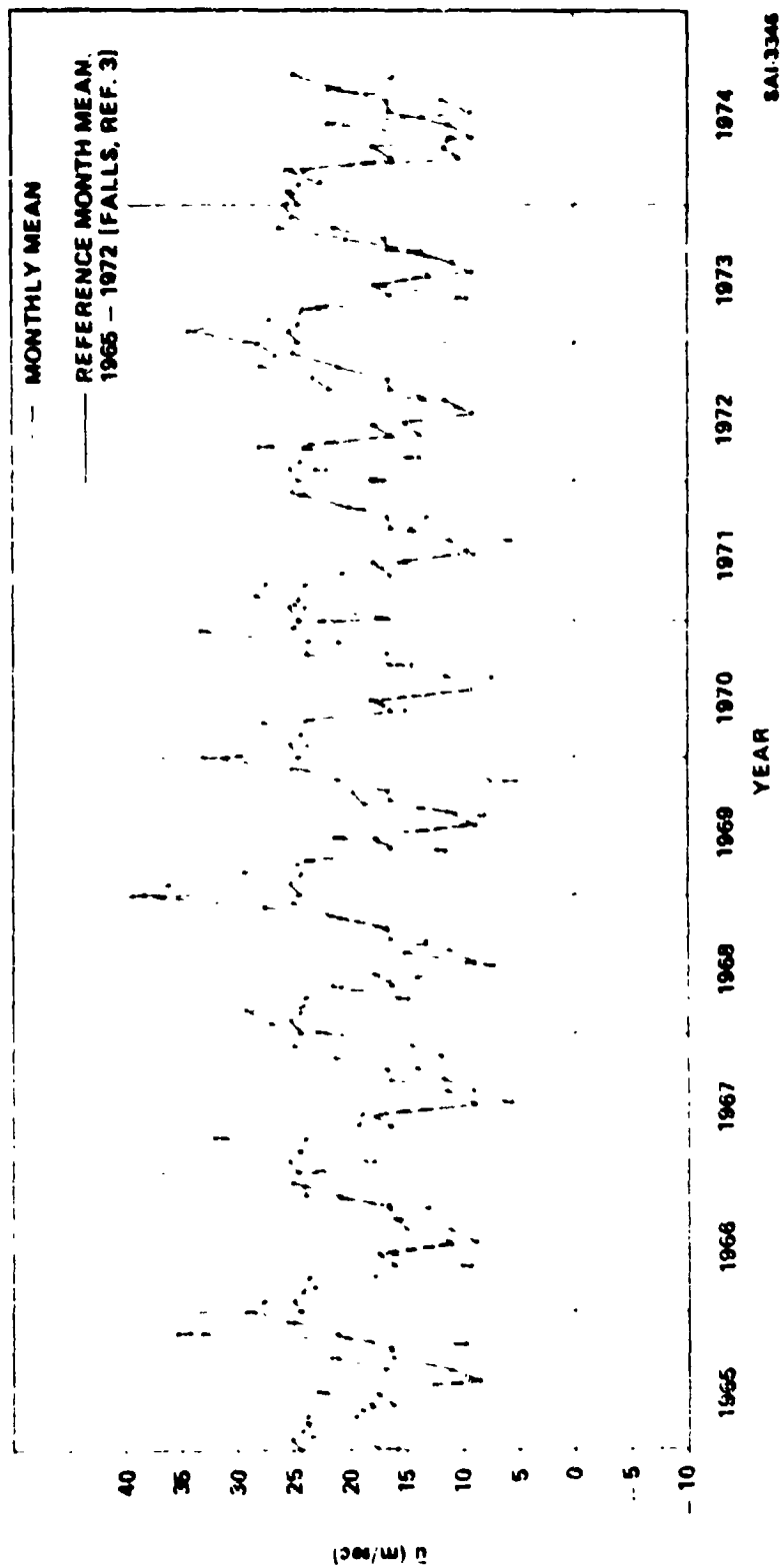


Figure 22. Monthly Mean Zonal Wind for Reference Period 1965-72 (Falls, Ref. 3) and for Individual Months during the Period 1965-74 at 12 km Over JFAB

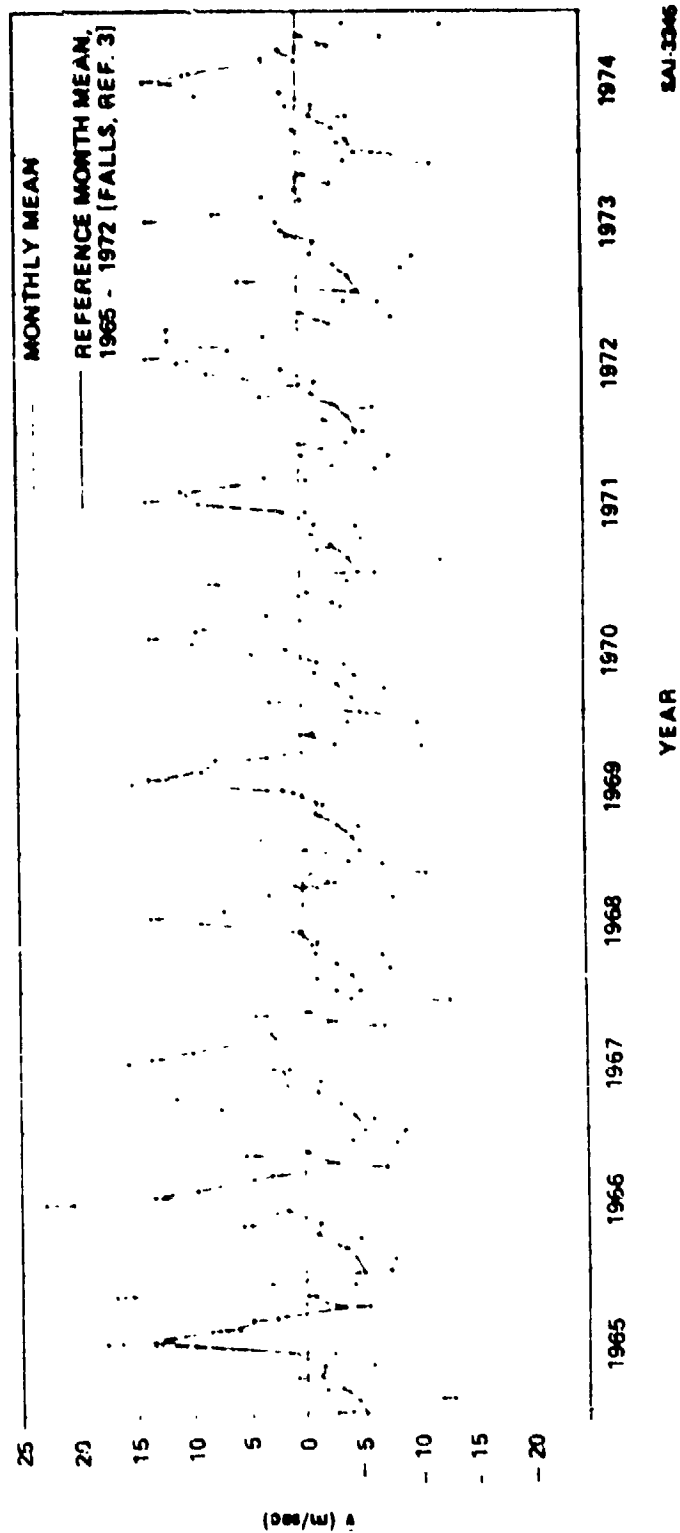


Figure 23. Monthly Mean Meridional Wind for Reference Period 1965-72 (Falls, Ref. 3; and for Individual Months during the Period 1965-74 at 12 km Over VAFB

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Table 11. Bivariate Normal Statistics of the Vector
Wind at 12 km Over VAFB for Individual Months
During the Period 1965-74

BIVARIATE NORMAL STATISTICS OF THE VECTOR
WIND AT 12 KM OVER VAFB FOR INDIVIDUAL MONTHS
DURING THE PERIOD 1965-74

MONTH	YEAR OF REC.	ALT KM	ALPHA DEG	MEAN U	MEAN V	R (X,Y)	MEAN Z	STD. Y	N
1	JANUARY 1965	12	90.0	15.27	26.30	+0998	-2.68	22.00	62
1	JANUARY 1966	12	90.0	27.21	11.10	+1852	-7.32	15.00	62
1	JANUARY 1967	12	90.0	24.13	12.79	+5030	-8.83	15.96	62
1	JANUARY 1968	12	90.0	21.48	26.29	+0847	-2.90	12.84	62
1	JANUARY 1969	12	90.0	39.25	24.25	+3226	-3.38	17.33	62
1	JANUARY 1970	12	90.0	33.73	19.26	+1544	-9.77	14.02	62
1	JANUARY 1971	12	90.0	16.5	16.74	+0265	-6.47	15.29	62
1	JANUARY 1972	12	90.0	16.72	17.14	+007	-5.86	13.27	62
1	JANUARY 1973	12	90.0	28.31	11.90	+0609	-6.98	15.77	62
1	JANUARY 1974	12	90.0	25.85	16.87	+3769	-6.88	15.86	62
2	FEBRUARY 1965	12	90.0	23.71	21.82	+0644	-13.05	11.34	56
2	FEBRUARY 1966	12	90.0	27.63	11.82	+3100	-7.91	14.24	56
2	FEBRUARY 1967	12	90.0	17.80	17.71	+6647	-8.23	14.03	56
2	FEBRUARY 1968	12	90.0	26.89	-3.12	-0142	-1.84	15.25	56
2	FEBRUARY 1969	12	90.0	36.21	16.53	+3432	-3.68	16.12	56
2	FEBRUARY 1970	12	90.0	23.86	16.61	+1454	-2.93	18.05	56
2	FEBRUARY 1971	12	90.0	24.13	13.56	+2923	-12.66	12.82	56
2	FEBRUARY 1972	12	90.0	22.92	16.93	+1623	-2.25	14.64	56
2	FEBRUARY 1973	12	90.0	39.44	21.94	+1106	-5.15	15.68	56
2	FEBRUARY 1974	12	90.0	25.25	12.69	+2905	-3.97	12.55	56
3	MARCH 1965	12	90.0	23.56	10.11	+2196	-1.60	15.29	62
3	MARCH 1966	12	90.0	23.45	16.93	+2923	-3.36	12.44	62
3	MARCH 1967	12	90.0	28.18	11.43	+2066	-7.43	14.22	62
3	MARCH 1968	12	90.0	28.37	16.43	+2254	-7.74	16.82	62
3	MARCH 1969	12	90.0	29.33	13.98	+0046	-5.15	10.29	62
3	MARCH 1970	12	90.0	24.25	9.22	+2744	-7.36	12.33	62
3	MARCH 1971	12	90.0	25.45	13.64	+2377	-1.64	14.83	62
3	MARCH 1972	12	90.0	12.64	12.43	+0465	-6.77	13.66	62
3	MARCH 1973	12	90.0	27.29	12.14	+2024	-8.55	15.71	62
3	MARCH 1974	12	90.0	22.11	14.7	+0137	-1.2	14.77	62
4	APRIL 1965	12	90.0	19.69	9.34	+0201	-8.0	13.08	60
4	APRIL 1966	12	90.0	18.19	14.50	+5331	-4.89	12.67	60
4	APRIL 1967	12	90.0	31.75	10.09	+1274	-11.50	13.96	60
4	APRIL 1968	12	90.0	14.90	12.36	+2121	-7.13	10.61	60
4	APRIL 1969	12	90.0	22.79	14.46	+1452	-1.62	12.60	60
4	APRIL 1970	12	90.0	27.84	14.89	+3453	-4.88	15.67	60
4	APRIL 1971	12	90.0	27.51	11.38	+0390	-5.59	15.44	60
4	APRIL 1972	12	90.0	28.28	12.91	+5725	-3.39	16.00	60
4	APRIL 1973	12	90.0	22.52	14.14	+1446	-10.37	14.35	60
4	APRIL 1974	12	90.0	25.94	12.79	+0261	-4.80	18.40	60
5	MAY 1965	12	90.0	17.84	16.52	+2353	-9.81	15.46	62
5	MAY 1966	12	90.0	9.68	11.30	+5527	-5.82	12.69	62
5	MAY 1967	12	90.0	19.42	17.83	+3644	-1.66	15.69	62
5	MAY 1968	12	90.0	21.70	16.56	+0305	-7.7	8.31	62
5	MAY 1969	12	90.0	11.59	10.64	+5362	-11.92	9.73	62
5	MAY 1970	12	90.0	14.92	12.10	+5409	-4.06	10.45	62
5	MAY 1971	12	90.0	20.46	9.06	+2498	-5.08	11.94	62
5	MAY 1972	12	90.0	13.66	16.72	+2961	-3.32	7.84	62
5	MAY 1973	12	90.0	9.73	16.49	+0109	-2.58	12.45	62
5	MAY 1974	12	90.0	11.23	18.29	+5660	-7.4	14.39	62
6	JUNE 1965	12	90.0	23.18	14.13	+0596	-11.42	16.12	60
6	JUNE 1966	12	90.0	14.57	13.72	+2217	-2.89	13.05	60
6	JUNE 1967	12	90.0	19.24	13.31	+2974	-1.47	13.08	60
6	JUNE 1968	12	90.0	14.62	12.63	+0490	-6.4	14.32	60
6	JUNE 1969	12	90.0	21.44	15.60	+1868	-4.4	14.63	60
6	JUNE 1970	12	90.0	18.27	14.63	+0534	-4.09	15.79	60
6	JUNE 1971	12	90.0	14.46	8.19	+2144	-4.48	12.44	60
6	JUNE 1972	12	90.0	16.11	4.66	+1724	-7.71	12.00	60
6	JUNE 1973	12	90.0	15.40	14.44	+1222	-1.4	13.28	60
6	JUNE 1974	12	90.0	11.40	9.40	+6305	-6.59	16.66	60

Table 11. Bivariate Normal Statistics of the Vector
Wind at 12 km Over VAFB for Individual Months
During the Period 1965-74 (Cont'd)

MONTH	PERIOD	U km	V km	U km	V km	U km	V km	U km	V km
1	1965-1966	12	90.0	8.38	15.11	-0.089	17.89	7.59	82
2	1966-1967	12	90.0	11.27	9.12	-0.545	23.12	10.44	82
3	1967-1968	12	90.0	7.81	8.78	-0.261	15.55	8.59	82
4	1968-1969	12	90.0	7.10	8.47	-0.090	9.78	8.90	82
5	1969-1970	12	90.0	10.13	11.82	-0.155	15.07	8.93	82
6	1970-1971	12	90.0	7.25	7.25	-0.124	9.76	8.13	82
7	1971-1972	12	90.0	10.19	12.71	-0.137	8.82	8.02	82
8	1972-1973	12	90.0	9.17	17.43	-0.175	10.59	10.19	82
9	1973-1974	12	90.0	13.19	12.91	-0.179	11.65	8.59	82
10	1974-1975	12	90.0	10.40	11.82	-0.220	11.51	7.42	82
11	1975-1976	12	90.0	14.87	17.78	-0.155	8.96	7.96	82
12	1976-1977	12	90.0	14.76	8.96	-0.217	9.85	7.87	82
13	1977-1978	12	90.0	9.17	7.15	-0.267	9.71	8.82	82
14	1978-1979	12	90.0	15.23	7.80	-0.261	8.87	10.15	82
15	1979-1980	12	90.0	7.89	7.49	-0.213	8.77	8.08	82
16	1980-1981	12	90.0	8.96	5.71	-0.09	8.09	8.09	82
17	1981-1982	12	90.0	7.81	8.90	-0.267	10.47	8.15	82
18	1982-1983	12	90.0	13.67	17.37	-0.173	9.85	12.57	82
19	1983-1984	12	90.0	13.72	8.27	-0.277	7.21	8.21	82
20	1984-1985	12	90.0	21.92	8.91	-0.277	8.06	9.25	82
21	1985-1986	12	90.0	21.72	12.31	-0.186	8.69	15.02	82
22	1986-1987	12	90.0	14.12	21.67	-0.107	8.50	14.00	82
23	1987-1988	12	90.0	13.68	18.23	-0.102	2.26	12.63	82
24	1988-1989	12	90.0	13.05	8.46	-0.089	-8.15	8.97	82
25	1989-1990	12	90.0	18.81	8.35	-0.082	7.53	11.78	82
26	1990-1991	12	90.0	15.49	11.03	-0.087	-0.09	7.53	82
27	1991-1992	12	90.0	15.81	12.72	-0.183	-0.82	10.18	82
28	1992-1993	12	90.0	21.86	13.37	-0.091	11.31	12.59	82
29	1993-1994	12	90.0	13.81	7.17	-0.155	1.66	11.81	82
30	1994-1995	12	90.0	8.17	7.17	-0.09	7.17	8.81	82
31	1995-1996	12	90.0	10.04	10.75	-0.133	-8.26	11.09	82
32	1996-1997	12	90.0	12.82	21.19	-0.107	-7.60	11.87	82
33	1997-1998	12	90.0	14.26	11.15	-0.087	-7.21	11.73	82
34	1998-1999	12	90.0	14.75	12.75	-0.207	1.57	11.12	82
35	1999-2000	12	90.0	14.91	13.13	-0.102	-10.82	12.53	82
36	2000-2001	12	90.0	21.47	12.71	-0.171	-7.41	10.77	82
37	2001-2002	12	90.0	13.36	13.13	-0.115	-7.12	13.02	82
38	2002-2003	12	90.0	23.25	8.79	-0.1	1.10	23.27	82
39	2003-2004	12	90.0	20.45	17.55	-0.087	-0.07	15.82	82
40	2004-2005	12	90.0	13.63	11.89	-0.267	11.31	17.58	82
41	2005-2006	12	90.0	16.79	19.87	-0.117	16.94	22.24	80
42	2006-2007	12	90.0	24.04	17.83	-0.163	5.41	15.84	80
43	2007-2008	12	90.0	11.74	18.05	-0.140	8.35	18.13	80
44	2008-2009	12	90.0	20.47	17.81	-0.287	-11.03	19.82	80
45	2009-2010	12	90.0	14.35	16.72	-0.187	1.18	11.75	80
46	2010-2011	12	90.0	23.55	8.25	-0.087	-7.12	11.77	80
47	2011-2012	12	90.0	20.13	19.17	-0.089	-8.77	19.72	80
48	2012-2013	12	90.0	27.84	15.79	-0.087	-8.54	18.89	80
49	2013-2014	12	90.0	29.13	15.37	-0.136	-7.18	7.88	80
50	2014-2015	12	90.0	21.88	11.25	-0.160	-8.01	08	80
51	2015-2016	12	90.0	29.76	17.63	-0.086	7.10	17.75	82
52	2016-2017	12	90.0	23.22	27.23	-0.273	-8.28	15.88	82
53	2017-2018	12	90.0	19.62	19.53	-0.220	-12.98	19.27	82
54	2018-2019	12	90.0	27.33	11.58	-0.144	8.95	8.04	82
55	2019-2020	12	90.0	29.88	14.09	-0.119	-10.25	23.94	82
56	2020-2021	12	90.0	13.38	15.75	-0.174	7.89	11.88	82
57	2021-2022	12	90.0	29.76	19.53	-0.111	-7.19	25.82	82
58	2022-2023	12	90.0	29.81	19.51	-0.153	-7.48	12.82	82
59	2023-2024	12	90.0	29.82	19.22	-0.292	-12.71	19.20	82
60	2024-2025	12	90.0	18.04	12.98	-0.162	-13.08	19.10	82

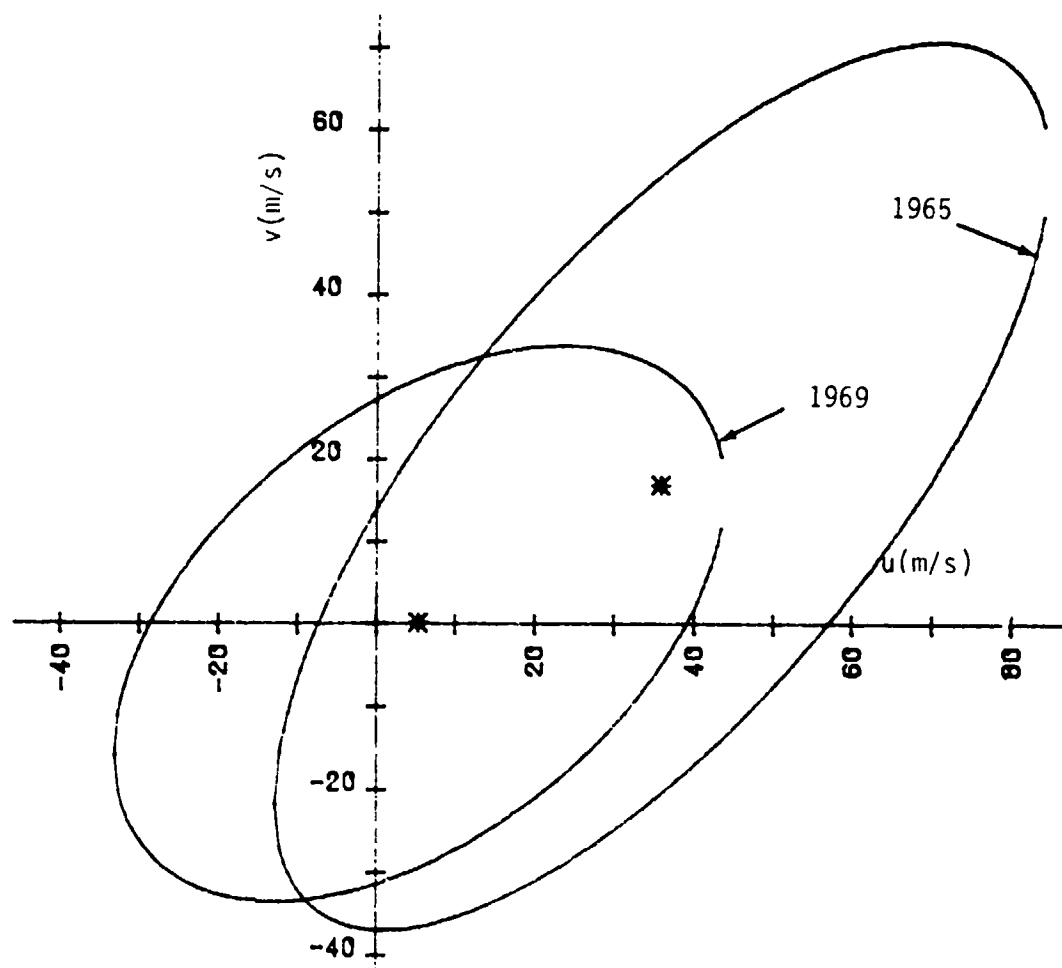
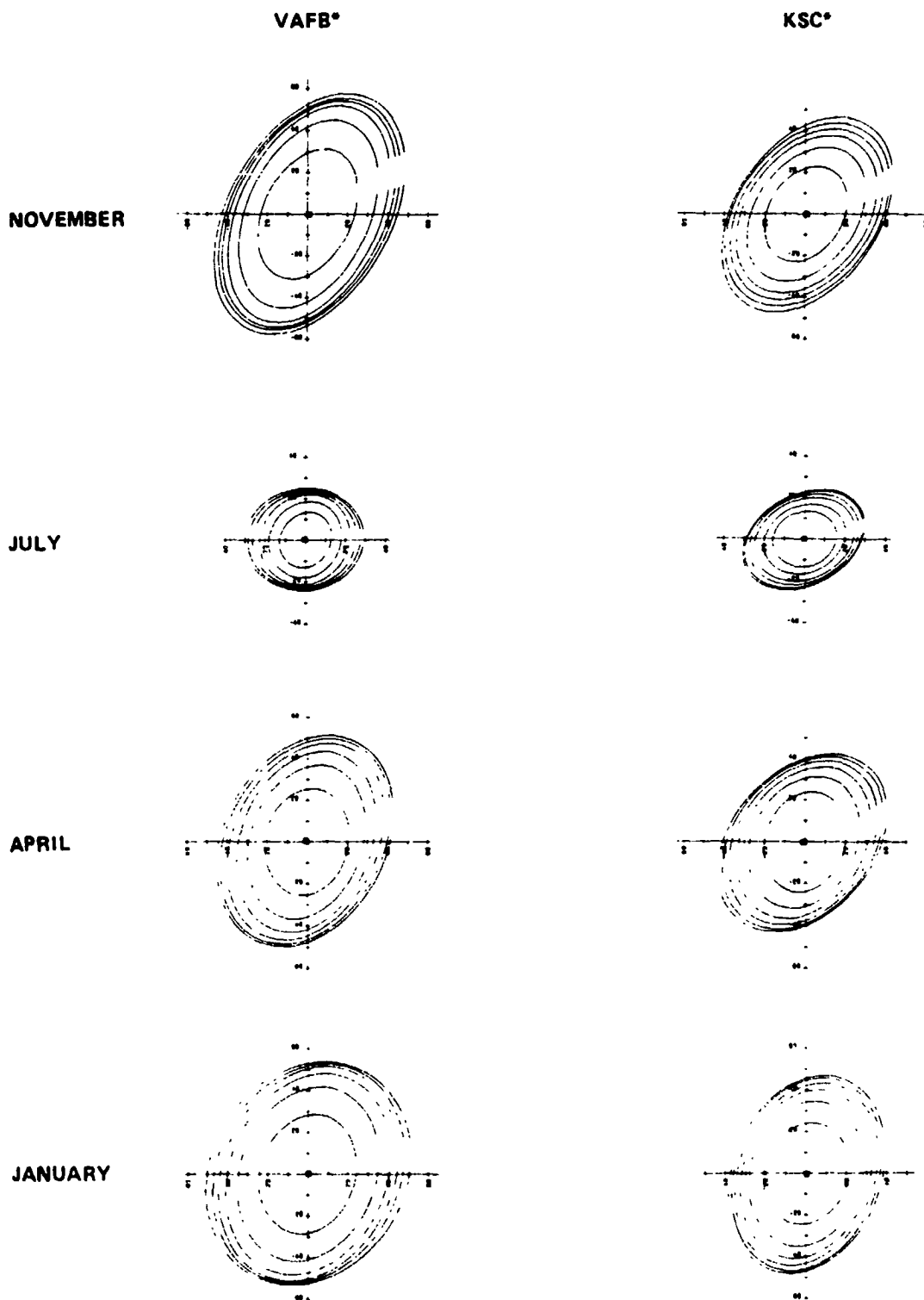


Figure 25. 95 Percent Vector Wind Ellipse at 12 km During November 1965 and 1969 at VAFB

G. COMPARISON OF WIND CHANGE WITH RESPECT TO TIME AT KSC AND VAFB

Wind change at KSC has been studied in detail in an earlier report [1]. In anticipation of questions that may arise concerning comparisons of KSC and VAFB, a set of 95 percent vector wind change ellipses at 12 km have been prepared for the two locations. The ellipses illustrated in Figure 2c are for the months of January, April, July and November. The larger wind change at VAFB is clearly shown during all months with the exception of July when the wind change is small at both locations.



* THE SIX ELLIPSES FOR EACH MONTH ARE FOR THE INCREMENTS AT 12 KM HR INTERVALS FROM 12 TO 72 HOURS; THE AREA OF THE ELLIPSES INCREASES WITH INCREASING TIME INTERVAL

Figure 26. Comparison of 95 Percent Wind Change Ellipses at 12 km for VAFB (1965-74) and KSC (1956-70)

IV. CONCLUSIONS

The analysis presented in the preceding section for selected months and altitudes illustrates how various theoretical distribution functions can be used for calculation of wind change with respect to time at Vandenberg AFB, California. The calculations can be made by utilization of the statistics given in the appendix for any reference month at 1 km altitude increments from 0 to 27 km.

The basic underlying assumption for the calculation of the distributions is that the joint distribution of the four variables represented by the components of the wind vector at any initial time and after a specified elapsed time is quadrivariate normal. If the wind vector is specified at an initial time, then the conditional joint distribution of the wind components at a future time is bivariate normal. Since each of the variables of the quadrivariate normal distribution is normal and the difference of two normal distributions is normal, it follows that wind component change is also normal and the joint distribution of zonal and meridional wind change is bivariate normal. The modulus of bivariate normally distributed variables has a Rayleigh distribution. Therefore, the modulus of vector wind change with respect to time is Rayleigh.

Sample distributions based on reference month Rawinsonde data obtained during 1965-74 agree reasonably well with the aforementioned theoretical distributions.

The standard deviation of wind component change with respect to time is the only statistic required for determination of the theoretical probability distribution (normal with zero mean) of wind component change. It has been shown that over a large range of altitudes that this statistic can be estimated from wind component standard deviation and the decay constant of the component theoretical autocorrelation function (Table 1). The assumption of exponential decay of the autocorrelation function is reasonably accurate in most instances to time increments as large as 60 hours during November, December and January.

The observed modulus of vector wind change with respect to time is systematically larger than the predicted modulus (Section III.C) for extreme probabilities. This may be attributable to inadequacy of the theory or inaccuracies of the data which affect the observed distribution at the extreme probabilities. If the theoretical distribution at extreme probabilities is to be used in engineering applications, it will be necessary to explain these systematic differences.

V. REFERENCES

1. Adelfang, S. I.: Analysis of Vector Wind Change with Respect to Time for Cape Kennedy, Florida. Science Applications, Inc., Report SAI-78-552-HU, prepared for NASA-Marshall Space Flight Center under Contract NAS8-32226, 14 April 1977.
2. Smith, O. E.: Vector Wind and Vector Wind Shear Models 0-27 km Altitude for Cape Kennedy, Florida, and Vandenberg AFB, California. NASA TMX-73319, July 1976.
3. Falls, L. W.: Normal Probabilities for Vandenberg AFB Wind Component. Monthly Reference Periods for all Flight Azimuths, 0 to 70 km Altitudes. NASA TMX-64897, January 1975.
4. Weil, H.: The Distribution of Radial Error. Ann. of Mathematical Statistics, Vol. 25, 1954, pp. 168-170.
5. Yadavalli, S. V.: On Applications of Some Results Related to Bivariate Gaussian Density Distribution Functions. Int. J. of Control, 1st Series, Vol. 5, No. 2, 1967, pp. 191-194.

APPENDIX

This appendix contains two sets of reference month quadravariate and conditional bivariate normal statistics of variables X, Y, XP and YP, at 1 km intervals from 0 to 27 km. The statistics were calculated from 10 years (1965-74) of twice daily VAFB serially complete Rawinsonde data. The notation for the variable given in Section II of this report differs from the notation established for the computer output given herein; the notations are compared in Table A-1.

TABLE A-1. NOTATION OF VARIABLES

Computation Set	A		B	
Variable	Text (Sect. II)	Computer Output	Text (Sect. II)	Computer Output
X	u_0	$u(\text{at } T)$	u_0	$u(\text{at } T)$
Y	v_0	$v(\text{at } T)$	v_0	$v(\text{at } T)$
XP	u_1	$u(\text{at } T+DT)$	$u_1 - u_0$ $= \Delta u$	$u(\text{at } T+DT)$ $-u(\text{at } T)$
YP	v_1	$v(\text{at } T+DT)$	$v_1 - v_0$ $= \Delta v$	$v(\text{at } T+DT)$ $-v(\text{at } T)$

Table A-1 shows that the quadravariate statistics of computation set "A" are for wind components at an initial time and after a specified time increment; the statistics for set "B" are for wind components at an initial time and wind component change after a specified time increment. The reference month quadravariate normal statistics at a particular altitude for six time increments (12, 24, 36, 48, 60 and 72 hours) are listed in the lower left of each page of computer listing; the six sets of conditional bivariate normal statistics corresponding to the six time increments are listed in the lower right. The data were conditioned on monthly means given by Falls [3]. The derivation of the conditional bivariate normal statistics for any other given vector involves recalculation of the

conditional means according to equations A-1 and A-2; the standard deviations and correlation coefficients do not have to be recalculated because they are independent of the given wind vector.

$$\bar{x}_c | xp^* = \bar{x} + \frac{[(R(x, xp) - R(x, yp) R(xp, yp)) (xp^* - \bar{xp}) (\sigma_x / \sigma_{xp}) + (R(x, yp) - R(x, xp) R(xp, yp)) (yp^* - \bar{yp}) (\sigma_x / \sigma_{yp})]}{1 - [R(xp, yp)]^2} \quad (A-1)$$

$$\bar{y}_c | yp^* = \bar{y} + \frac{[(R(y, xp) - R(y, yp) R(xp, yp)) (xp^* - \bar{xp}) (\sigma_y / \sigma_{xp}) + (R(y, yp) - R(y, xp) R(xp, yp)) (yp^* - \bar{yp}) (\sigma_y / \sigma_{yp})]}{1 - [R(xp, yp)]^2} \quad (A-2)$$

where, \bar{x}_c and \bar{y}_c are the mean components of the conditional distribution, xp^* and yp^* are the components of the given vector and $\sigma_x, \sigma_y, \sigma_{xp}$ and σ_{yp} are equivalent to S.D.x, S.D.y, S.D.xp and S.D.yp, respectively given in the computer listings.

ALTIMETRY (KM) - 0

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	S.D. YP	MEAN XP	MEAN YP	S.D. XP	S.D. YP
.42	2.89	-.5137	-.62	3.43	620	.41	-.57						
.42	2.89	3.42	.4789	-.5127	-.1976	2.76	-.4535	.41	-.59	2.90			
.43	2.88	3.44	.3937	-.5113	-.3078	2.61	-.4701	.41	-.61	3.15			
.42	2.88	3.43	.1625	-.5179	.1066	2.73	-.4859	.42	-.61	3.30			
.42	2.88	3.43	.2221	-.5135	-.0787	2.77	-.5085	.42	-.61	3.31			
.38	2.89	3.45	.1102	-.5035	.1520	2.70	-.4797	.41	-.60	3.43			
.38	2.88	3.45	.1328	-.5031	-.0798	2.80	-.5137	.43	-.62	3.43			
.42	2.89	3.42	-.0914	-.5127	-.1976	2.76	-.4535	.41	-.59	2.90			
.43	2.88	3.44	.4193	-.5113	-.3078	2.61	-.4701	.41	-.61	3.15			
.36	2.88	3.44	-.2815	-.5179	.1066	2.73	-.4859	.42	-.61	3.30			
.48	2.88	3.43	.2593	-.5135	-.0787	2.77	-.5085	.42	-.61	3.31			
.60	2.89	3.45	-.3229	-.5035	.1520	2.70	-.4797	.41	-.60	3.43			
.22	2.88	3.45	.2529	-.5031	-.0798	2.80	-.5137	.43	-.62	3.43			

ALTITUDE (KM)

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X.Y.XP.YP

DT HR	MEAN		S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN		MEAN Y	S.D. Y
	X	Y						X	Y		
12	1.08	1.08	4.34	.0402	-1.55	7.07	620	.91	-1.55		
24	1.06	1.06	4.29	7.06	.6927	.0496	.2260	3.59	.0149	-1.68	4.51
36	1.07	1.07	4.26	7.04	.4260	.0580	.2142	4.11	.0995	-1.65	5.25
48	1.06	1.06	4.26	7.09	.2459	.0532	.2013	4.25	-.0033	-1.63	6.72
60	1.01	1.01	4.30	7.11	.1807	.0630	.2072	4.28	.0013	-1.60	6.81
72	.95	.95	4.35	7.17	.1632	.0582	.1954	4.31	.0219	-1.59	6.85
84	.88	.88	4.42	7.11	.1192	.0329	.1695	4.32	.0275	-1.57	6.92

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1932) - VANDERBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/60 - 12/74
 ALPHA ANGLE - 90.9

ALTITUDE (KM) - 2

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,YP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
2	3.65	5.83	.7260	-2.61	7.72	.1187	-2.61	7.75	620	3.23	3.99	.0391	-2.74	5.05
24	2.63	5.77	.5215	-2.55	7.71		.4762	.1167		3.30	4.97	.0245	-2.80	5.60
36	2.72	5.78	.4073	-2.53	7.77		.2304	.1147		3.34	5.35	.0326	-2.81	7.20
48	3.68	5.80	.3576	-2.57	7.81		.2028	.1173		3.40	5.52	.0338	-2.80	7.32
60	3.60	5.86	.2927	-2.46	7.80		.1534	.1085		3.45	5.64	.0496	-2.78	7.38
72	3.53	5.87	.2353	-2.37	7.85		.1079	.0927		3.49	5.70	.0627	-2.75	7.46

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
3.18	-2.64

ALTITUDE (KM) - 3

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,YP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
2	6.46	7.74	.7633	-3.32	8.69	.1907	-3.33	8.73	520	5.91	4.98	.0537	-3.33	5.68
24	6.48	7.64	.6710	-3.27	8.67		.4789	.1835		6.01	6.35	.0780	-3.44	7.40
36	6.42	7.64	.5473	-3.30	8.71		.3344	.1704		6.06	6.98	.0965	-3.47	7.98
48	6.44	7.66	.4814	-3.32	8.74		.2613	.1791		6.09	7.29	.1074	-3.48	8.11
60	6.43	7.67	.4073	-3.24	8.71		.2054	.1637		6.12	7.39	.1282	-3.49	8.21
72	6.31	7.71	.3248	-3.14	8.73		.1624	.1519		6.15	7.58	.1577	-3.46	8.31

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
5.89	-3.16

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP
 CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
		8.78	9.49	.2065	-3.61	9.76	620						8.19	-3.27
12		8.85	9.42	.7906	-3.60	9.69		8.21	5.71	.0800	-3.50	6.47		
24		8.89	9.26	.5960	-3.54	9.64		8.31	7.54	.0969	-3.66	8.22		
36		9.00	9.26	.4836	-3.57	9.67		8.35	8.28	.1090	-3.72	8.93		
48		9.96	9.25	.3937	-3.54	9.63		8.45	8.71	.1183	-3.77	9.13		
60		8.85	9.28	.3356	-3.47	9.60		8.54	8.93	.1247	-3.77	9.22		
72		8.74	9.33	.2542	-3.38	9.60		8.64	9.18	.1502	-3.74	9.35		

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP
 CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
		11.10	11.12	.2550	-3.45	10.98	620						10.45	-3.17
12		11.17	11.02	.8028	-3.43	10.92		10.46	6.49	.1972	-3.39	7.49		
24		11.22	10.65	.6230	-3.35	10.84		10.55	8.55	.1861	-3.53	9.48		
36		11.31	10.74	.5049	-3.36	10.86		10.61	9.51	.1788	-3.60	10.19		
48		11.27	10.71	.4124	-3.26	10.71		10.71	10.05	.1764	-3.65	10.37		
60		11.15	10.77	.3380	-3.18	10.65		10.84	10.42	.1801	-3.65	10.35		
72		11.02	10.81	.2600	-3.07	10.63		10.94	10.73	.2020	-3.61	10.47		

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (53214) - VALENCBERG
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/63 - 12/74
ALPHA ANGLE - 92.6

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	13.02	12.39	.8020	-3.57	12.11	.6939	.4334	.2537	620	.3130	.1147	12.21	7.26	.2179	12.22	-3.34	-3.60	8.59
24	13.09	12.20	.6474	-3.51	12.03	.4334	.2537	.2537		.2887	.0208	12.30	9.59	.2200			-3.74	10.83
36	13.15	12.18	.4950	-3.51	12.04	.2737	.2537	.2537		.2542	-.0167	12.37	10.75	.2247			-3.79	11.52
48	13.11	12.08	.4052	-3.37	11.93	.1981	.2537	.2537		.2642	-.0218	12.51	11.35	.2161			-3.64	11.68
60	12.99	12.11	.3397	-3.26	11.83	.1769	.2537	.2537		.2736	-.0114	12.63	11.72	.2154			-3.85	11.67
72	12.84	12.13	.2602	-3.17	11.87	.1716	.2537	.2537		.2580	.0229	12.75	12.10	.2308			-3.81	11.74

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	14.94	13.80	.8127	-4.07	13.32	.6952	.4197	.2634	620	.3082	.1280	13.56	8.23	.2165	13.93	-3.78	-4.08	9.64
24	15.06	12.62	.6500	-3.99	13.24	.4197	.2634	.2634		.2835	.0434	14.05	10.86	.2222			-4.28	11.97
36	15.13	12.57	.4926	-3.97	13.25	.2634	.2634	.2634		.2435	-.0135	14.15	12.02	.2227			-4.34	12.77
48	15.08	12.55	.4121	-3.84	13.22	.1842	.2634	.2634		.2435	-.0052	14.29	12.62	.2252			-4.38	12.97
60	14.97	13.61	.3253	-3.72	13.19	.1700	.2634	.2634		.2710	.0055	14.45	13.10	.2221			-4.40	12.66
72	14.81	13.65	.2519	-3.72	13.24	.1662	.2634	.2634		.2392	.0325	14.60	13.50	.2355			-4.34	12.57

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATION (93214) - VANDENBERG
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	15.78	15.50	.7953	-4.44	14.51	.6743	.2882	.1314	620	15.79	9.37	.2450	-4.33	10.72
36	48	15.97	15.40	.6073	-4.36	14.54	.4165	.2567	.0389		15.65	12.28	.2351	-4.60	13.14
60	72	16.05	15.28	.3874	-4.25	14.51	.1591	.2535	-.0263		16.12	14.28	.2445	-4.67	14.03
		16.68	15.37	.2542	-4.10	14.53	.1340	.2531	-.0076		16.29	14.77	.2306	-4.74	14.23
									.0249		16.43	15.12	.2409	-4.69	14.24

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X
15.75
-4.09

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	18.87	17.14	.7331	-4.95	15.75	.6536	.2533	.1355	620	17.90	10.29	.2400	-4.90	11.87
36	48	19.02	17.05	.6036	-4.89	15.71	.3945	.2383	.0346		17.95	13.52	.2429	-5.08	14.37
60	72	19.07	16.96	.4733	-4.83	15.72	.2267	.2287	-.0285		18.08	14.97	.2462	-5.14	15.22
		19.33	17.05	.3250	-4.71	15.56	.1411	.2317	-.0455		18.20	15.71	.2322	-5.21	15.41
		19.82	17.05	.2527	-4.63	15.60	.1137	.2254	-.0281		18.50	16.65	.2311	-5.24	15.30
									.0170					-5.21	15.38

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X
17.82
-4.62

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	21.08	18.50	.260:	-5.33	16.99	620	20.13	-4.93					

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	23.78	19.45	.2412	-5.41	17.23	620	22.96	-4.99	23.06	10.86	.2056	-5.18	12.08
24	23.94	19.45	.2412	-5.41	17.23	620	22.96	-4.99	23.06	10.86	.2056	-5.18	12.08
36	24.07	19.45	.2412	-5.41	17.23	620	22.96	-4.99	23.06	10.86	.2056	-5.18	12.08
48	24.13	19.45	.2412	-5.41	17.23	620	22.96	-4.99	23.06	10.86	.2056	-5.18	12.08
60	24.12	19.45	.2412	-5.41	17.23	620	22.96	-4.99	23.06	10.86	.2056	-5.18	12.08
72	23.99	19.45	.2412	-5.41	17.23	620	22.96	-4.99	23.06	10.86	.2056	-5.18	12.08

ALTITUDE (KM) - 12

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

FOR XP AND YP											
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y		
	25.09	18.34	.2201	-5.23	16.01	620		24.60	-5.11		

- 13

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	22.60	13.34	.3028	-4.10	11.36	620						22.28	-4.01
12	22.55	13.30	.8538	-4.10	11.35	.2979	.2427	6.72	.1765	-4.05	7.32		
24	22.73	13.27	.7415	-4.08	11.36	.2472	.1675	8.92	.2384	-4.12	10.09		
36	22.85	13.27	.6245	-4.08	11.35	.1978	.1103	10.37	.2561	-4.15	10.95		
48	22.94	13.26	.5425	-3.96	11.33	.1769	.0719	22.22	.2587	-4.19	11.16		
60	23.00	13.32	.4591	-3.84	11.30	.1872	.0653	22.27	.2505	-4.21	11.16		
72	22.95	13.36	.3715	-3.75	11.25	.1909	.0773	22.35	.2555	-4.21	11.15		

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	19.77	10.99	.3158	-3.52	9.87	620						19.54	-3.68
12	19.63	10.92	.8485	-3.57	9.87	.2582	.2582	5.82	.1385	-3.63	6.32		
24	19.89	10.89	.7422	-3.55	9.89	.1984	.1984	7.36	.1845	-3.63	8.47		
36	19.97	10.88	.6311	-3.55	9.86	.2537	.1592	8.51	.2228	-3.62	9.34		
48	20.05	10.88	.5328	-3.48	9.84	.2315	.1371	9.29	.2374	-3.63	9.57		
60	20.11	10.91	.4401	-3.37	9.81	.2287	.1207	9.87	.2465	-3.64	9.61		
72	20.13	10.92	.3593	-3.32	9.80	.2144	.1093	10.25	.2620	-3.64	9.64		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	16.77	5.41	.3510	-3.11	8.29									
12	16.83	9.38	.8414	-3.12	8.28	.7877	.3473	.3604	.2892	16.66	5.09	.1524	-3.31	5.05
24	16.86	9.37	.7414	-3.12	8.30	.5381	.3465	.3293	.2236	16.66	6.30	.2213	-3.25	6.88
36	16.84	9.38	.6150	-3.12	8.29	.3321	.3438	.2824	.1766	16.63	7.41	.2559	-3.21	7.68
48	16.92	9.36	.5350	-3.07	8.28	.2184	.3487	.2652	.1552	16.63	7.93	.2650	-3.21	7.92
60	17.01	9.36	.4426	-2.99	8.26	.1651	.3440	.2585	.1176	16.64	8.43	.2778	-3.21	7.98
72	17.01	9.34	.3564	-2.94	8.23	.1315	.3419	.2356	.1010	16.67	8.79	.2960	-3.20	8.05

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	13.49	8.19	.3274	-2.97	6.65									
12	13.51	8.17	.7863	-2.96	6.63	.7631	.3257	.3684	.2660	13.45	5.06	.0822	-3.08	4.21
24	13.60	8.15	.7250	-2.98	6.65	.5514	.3248	.3533	.2123	13.49	5.64	.1475	-3.05	5.41
36	13.66	8.16	.6177	-2.97	6.63	.3727	.3228	.3184	.1789	13.37	6.44	.1927	-3.04	6.01
48	13.69	8.15	.5453	-2.94	6.62	.2519	.3231	.3243	.1568	13.37	6.86	.1966	-3.04	6.20
60	13.71	8.17	.4602	-2.93	6.61	.2019	.3185	.2929	.1412	13.37	7.27	.2294	-3.04	6.31
72	13.73	8.17	.3830	-2.88	6.58	.1643	.3205	.2793	.1266	13.39	7.57	.2490	-3.04	6.36

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENES-6
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	9.91	6.99	.3286	-2.93	5.40	620	9.96	4.15	.0538	-3.04	3.48	10.02	-3.10
24	10.05	7.00	.7354	-2.95	5.43		9.90	4.73	.1244	-3.01	4.16		
36	10.07	7.01	.6515	-2.92	5.43		9.88	5.30	.1572	-3.01	4.63		
48	10.12	7.03	.5709	-2.87	5.42		9.86	5.74	.1745	-3.01	4.88		
60	10.14	7.03	.4938	-2.85	5.42		9.85	6.08	.2031	-3.00	5.01		
72	10.18	7.03	.4196	-2.83	5.42		9.83	6.34	.2299	-2.99	5.10		

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	6.80	6.60	.3646	-2.90	4.74	620	6.83	4.12	.1850	-3.03	3.15	6.88	-3.09
24	6.85	6.62	.7810	-2.89	4.76		6.75	4.45	.2288	-3.01	3.62		
36	6.92	6.68	.7372	-2.91	4.77		6.77	4.92	.2288	-2.98	4.05		
48	6.98	6.71	.6554	-2.91	4.77		6.75	5.24	.2335	-2.98	4.25		
60	7.00	6.76	.6077	-2.87	4.76		6.74	5.54	.2514	-2.97	4.40		
72	7.02	6.78	.5426	-2.82	4.75		6.74	5.81	.2732	-2.97	4.48		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	3.81	6.00	.2914	-2.85	4.09	620				3.91	-3.07						
12	3.91	6.85	.8200	-2.85	4.11	.7116	3.80	3.89	-.0066	-3.01	2.82		3.80	3.89	-.0066	-3.01	2.82
24	3.96	6.90	.7544	-2.86	4.09	.6414	3.78	4.38	.0510	-2.99	3.04		3.78	4.38	.0510	-2.99	3.04
36	4.01	6.95	.7051	-2.87	4.12	.5153	3.74	4.82	.0977	-2.96	3.42		3.74	4.82	.0977	-2.96	3.42
48	4.04	6.97	.6416	-2.83	4.12	.4161	3.73	5.21	.1259	-2.96	3.61		3.73	5.21	.1259	-2.96	3.61
60	4.05	6.98	.5745	-2.80	4.10	.3513	3.72	5.56	.1639	-2.96	3.75		3.72	5.56	.1639	-2.96	3.75
72	4.09	7.02	.5384	-2.82	4.10	.2809	3.71	5.73	.1777	-2.94	3.84		3.71	5.73	.1777	-2.94	3.84

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	1.79	6.90	.2322	-2.91	3.85	620				1.95	-3.01						
12	1.85	6.95	.8144	-2.90	3.86	.6535	1.86	3.99	-.0417	-2.97	2.87		1.86	3.99	-.0417	-2.97	2.87
24	1.91	6.98	.7501	-2.89	3.87	.5632	1.81	4.47	-.0556	-2.97	3.09		1.81	4.47	-.0556	-2.97	3.09
36	1.96	7.01	.7110	-2.89	3.86	.4894	1.77	4.85	.0319	-2.96	3.29		1.77	4.85	.0319	-2.96	3.29
48	1.98	7.02	.6559	-2.87	3.89	.4149	1.74	5.21	.0709	-2.96	3.43		1.74	5.21	.0709	-2.96	3.43
60	2.02	7.05	.6126	-2.85	3.89	.3527	1.74	5.45	.1325	-2.96	3.56		1.74	5.45	.1325	-2.96	3.56
72	2.08	7.08	.5601	-2.85	3.88	.2477	1.72	5.71	.1499	-2.95	3.69		1.72	5.71	.1499	-2.95	3.69

ALTITUDE (KM) - 22

QUADPAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N
12	.13	7.41	.8459	-3.00	3.77	.7034	.2575	.2603	
24	.21	7.44	.7981	-3.00	3.76	.5716	.2572	.2805	
36	.27	7.50	.7427	-3.02	3.77	.5035	.2497	.2532	
48	.30	7.54	.6708	-3.00	3.77	.4199	.2482	.2336	
60	.36	7.56	.6094	-3.00	3.78	.3488	.2489	.1688	
72	.43	7.57	.5478	-2.97	3.78	.2791	.2511	.1519	620

ALTIITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X.Y.XP.YP

DT	HR	MEAN X _P	S.D. X _P	R (X, X _P)	MEAN Y _P	S.D. Y _P	R (X, Y)	MEAN Y	S.D. Y	N
12	12	-.98	8.16	.8676	-2.99	3.85	.6723	.3059	.3162	
24	24	-.91	8.20	.8722	-2.99	3.85	.5824	.3046	.3101	
36	36	-.83	8.27	.7505	-2.99	3.85	.5145	.3037	.2910	
48	48	-.77	8.28	.6866	-2.98	3.87	.4061	.3040	.2543	
60	60	-.72	8.26	.6146	-2.99	3.89	.3255	.3053	.2017	
72	72	-.64	8.27	.5454	-2.96	3.89	.2637	.3054	.1484	
								-3.02	3.85	620

71

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
	-1.45	9.28	.3578	-2.84	4.17	620						-0.89	-2.89	
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-1.37	9.32	.8833	-2.83	4.19	.6837	.3514	.3592	.3327	-1.03	4.36	.1111	-2.86	3.01
24	-1.26	9.36	.8315	-2.83	4.20	.6068	.3506	.3629	.2987	-1.14	5.15	.1563	-2.85	3.26
36	-1.17	9.43	.7722	-2.82	4.21	.5287	.3231	.3624	.2777	-1.23	5.69	.2056	-2.86	3.49
48	-1.10	9.44	.6909	-2.79	4.22	.4499	.2866	.3710	.2594	-1.30	6.71	.2482	-2.87	3.69
60	-1.06	9.42	.6112	-2.78	4.22	.3386	.2306	.3751	.2410	-1.35	7.34	.2887	-2.87	3.90
72	-.99	9.44	.5553	-2.77	4.23	.2614	.1752	.3751	.2366	-1.40	7.71	.3180	-2.87	4.01

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
	-1.78	10.43	.3599	-2.63	4.38	620						-1.03	-2.51	
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-1.71	10.55	.8866	-2.60	4.39	.7163	.3897	.3846	.3569	-1.18	4.84	-.0292	-2.53	2.99
24	-1.59	10.59	.8320	-2.58	4.43	.6334	.3577	.3697	.3242	-1.32	5.82	.1244	-2.55	3.24
36	-1.51	10.61	.7611	-2.58	4.46	.5560	.3114	.3693	.3031	-1.42	6.80	.2091	-2.57	3.60
48	-1.42	10.62	.6911	-2.55	4.49	.4719	.2781	.3772	.2882	-1.52	7.57	.2467	-2.59	3.83
60	-1.37	10.60	.6217	-2.54	4.49	.3557	.2325	.3811	.2671	-1.57	8.21	.2833	-2.60	4.06
72	-1.28	10.59	.5572	-2.55	4.49	.2688	.1909	.3850	.2529	-1.64	8.70	.3078	-2.61	4.19

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDELSBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-1.63	11.56	3777	-2.89	4.71	620										-0.73	-2.68					
12	-1.52	11.60	.9117	.7327	.3841	.4020	.3623	.4020	.3841	.3623	.4020	.3623	.3623	.3841	.4020	.3623	.3841	.3623	.4020	.3623	.3841	.4020
24	-1.40	11.63	.8555	.6844	.3820	.3857	.3384	.3857	.3820	.3384	.3857	.3384	.3384	.3820	.3857	.3384	.3820	.3857	.3384	.3820	.3857	.3384
36	-1.30	.62	.7888	.5658	.3935	.3441	.3084	.3441	.3935	.3084	.3441	.3084	.3084	.3935	.3441	.3084	.3935	.3441	.3084	.3935	.3441	.3084
48	-1.19	11.66	.7203	.4576	.3973	.3153	.2836	.3153	.3973	.2836	.3153	.2836	.2836	.3973	.3153	.2836	.3973	.3153	.2836	.3973	.3153	.2836
60	-1.11	11.66	.6564	.3547	.3719	.2487	.2539	.2487	.3719	.2539	.2487	.2539	.2539	.3719	.2487	.2539	.3719	.2487	.2539	.3719	.2487	.2539
72	-1.02	11.65	.6054	.2787	.3939	.2026	.2412	.2026	.3939	.2412	.2026	.2412	.2412	.3939	.2026	.2412	.3939	.2026	.2412	.3939	.2026	.2412

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-1.01	12.90	.4350	-3.12	5.11	620										.14	-2.88					
12	-0.89	12.95	.9262	.7632	.4382	.4595	.4082	.4595	.4382	.4082	.4595	.4082	.4082	.4382	.4595	.4082	.4382	.4082	.4595	.4082	.4382	.4595
24	-0.75	13.00	.8683	.6619	.4399	.4579	.3671	.4579	.4399	.3671	.4579	.3671	.3671	.4399	.4579	.3671	.4399	.3671	.4579	.3671	.4399	.4579
36	-0.64	12.98	.8108	.5843	.4430	.4347	.3392	.4347	.4430	.3392	.4347	.3392	.3392	.4430	.4347	.3392	.4430	.3392	.4347	.3392	.4430	.4347
48	-0.51	13.03	.7507	.4873	.4482	.3979	.2960	.3979	.4482	.2960	.3979	.2960	.2960	.4482	.3979	.2960	.4482	.3979	.2960	.4482	.3979	.2960
60	-0.42	13.02	.6868	.3906	.4454	.3458	.2765	.3458	.4454	.2765	.3458	.2765	.2765	.4454	.3458	.2765	.4454	.3458	.2765	.4454	.3458	.2765
72	-0.33	13.01	.6451	.3267	.4432	.3039	.2591	.3039	.4432	.2591	.3039	.2591	.2591	.4432	.3039	.2591	.4432	.3039	.2591	.4432	.3039	.2591

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = USTAT
Y = VIAT

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
1	1/65 - 12/74	0	90.0	.42	2.89	-.5137	-.62	3.43	620
1	1/65 - 12/74	1	90.0	1.08	4.34	.0402	-1.55	7.07	620
1	1/65 - 12/74	2	90.0	3.57	5.87	.1187	-2.61	7.75	620
1	1/65 - 12/74	3	90.0	6.38	7.80	.1907	-3.33	8.73	620
1	1/65 - 12/74	4	90.0	8.78	9.49	.2065	-3.61	9.76	620
1	1/65 - 12/74	5	90.0	11.10	11.12	.2550	-3.45	10.38	620
1	1/65 - 12/74	6	90.0	12.92	12.55	.2757	-3.64	12.22	620
1	1/65 - 12/74	7	90.0	14.83	13.96	.2816	-4.15	13.44	620
1	1/65 - 12/74	8	90.0	16.63	15.65	.2816	-4.50	14.69	620
1	1/65 - 12/74	9	90.0	18.76	17.22	.2709	-5.02	15.81	620
1	1/65 - 12/74	10	90.0	21.08	18.89	.2601	-5.39	16.99	620
1	1/65 - 12/74	11	90.0	23.75	19.45	.2412	-5.41	17.23	620
1	1/65 - 12/74	12	90.0	25.09	18.34	.2201	-5.26	16.01	620
1	1/65 - 12/74	13	90.0	24.33	15.40	.2651	-4.64	13.34	620
1	1/65 - 12/74	14	90.0	22.60	13.34	.3028	-4.10	11.36	620
1	1/65 - 12/74	15	90.0	19.77	10.99	.3119	-3.52	9.87	620
1	1/65 - 12/74	16	90.0	16.77	9.41	.3510	-3.11	8.29	620
1	1/65 - 12/74	17	90.0	13.49	8.19	.3274	-2.97	6.65	620
1	1/65 - 12/74	18	90.0	9.91	6.99	.3286	-2.93	5.40	620
1	1/65 - 12/74	19	90.0	6.80	6.60	.3646	-2.90	4.74	620
1	1/65 - 12/74	20	90.0	3.81	6.80	.2914	-2.86	4.09	620
1	1/65 - 12/74	21	90.0	1.79	6.50	.2322	-2.91	3.65	620
1	1/65 - 12/74	22	90.0	.00	7.34	.2616	-2.99	3.77	620
1	1/65 - 12/74	23	90.0	-1.05	8.10	.3076	-3.02	3.85	620
1	1/65 - 12/74	24	90.0	-1.45	9.28	.3579	-2.84	4.17	620
1	1/65 - 12/74	25	90.0	-1.78	10.49	.3599	-2.63	4.38	620
1	1/65 - 12/74	26	90.0	-1.63	11.56	.3777	-2.89	4.71	620
1	1/65 - 12/74	27	90.0	-1.11	12.90	.4350	-3.12	5.11	620

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (92214) - VANDENBERG
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/65 - 12/74
AZIMUTH ANGLE - 90.0

ALTITUDE (KM) 0									
QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
	.63	3.05		-.78	3.49				584
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
OT	.70	3.09	-.1379	-.78	3.53	-.4495			
HP	.73	3.09	-.3979	-.77	3.55	-.4485			
	.73	3.08	-.2625	-.75	3.61	-.2359			
	.75	3.09	-.3527	-.75	3.62	-.2808			
	.82	3.10	-.2673	-.82	3.64	-.1950			
	.87	3.09	-.3210	-.85	3.62	-.2039			
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,XP)	MEAN X	S.D. X	GIVEN Y
							.77		-1.02

ALTITUDE (KM) 1									
QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
	.23	4.28	-.1341	-.16	7.38				504
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	GIVEN Y
							.23		-2.07
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,XP)	MEAN X	S.D. X	GIVEN Y
OT	.25	4.31	-.4721	-.151	7.41	-.7215			
HP	.27	4.36	-.3614	-.146	7.52	-.4924			
	.28	4.37	-.2890	-.140	7.55	-.3156			
	.28	4.38	-.2410	-.145	7.57	-.2352			
	.25	4.37	-.2035	-.155	7.55	-.1665			
	.26	4.37	-.2269	-.167	7.45	-.1438			
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,XP)	MEAN X	S.D. X	GIVEN Y

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - V. T. NEEPG
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	7.49	8.05	.6368	-2.99	10.88	.7527	-3.14	10.85	.0114	.1810	7.42	5.61	.0065	7.33	-3.39	-3.47	6.89
24	7.54	8.07	.4585	-2.93	10.97	.5072			.0091	.1968	7.45	6.99	.0159			-3.42	9.12
36	7.50	8.07	.2809	-2.83	11.01	.3747			.0158	.2023	7.50	7.82	.0062			-3.39	9.83
48	7.62	8.22	.1976	-2.76	11.06	.2888			.0223	.1887	7.46	7.87	-.0147			-3.38	10.20
60	7.78	8.30	.1727	-2.78	11.05	.2373			.0230	.1573	7.42	7.92	-.0164			-3.36	10.44
72	8.00	8.35	.1686	-2.82	11.00	.1873			.0238	.1464	7.39	7.93	-.0172			-3.35	10.54

ALTITUDE (KM) - 5

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	9.75	9.45	.7202	-3.03	11.81	.7374	-3.16	11.80	.0256	.1849	9.53	5.40	-.0477	9.45	-3.45	-3.55	7.72
24	9.79	9.47	.4873	-3.00	11.92	.4823			.0239	.2036	9.59	6.02	-.0109			-3.47	10.08
36	9.77	9.45	.3208	-2.93	11.99	.3542			.0287	.1892	9.65	8.83	.0058			-3.43	10.83
48	9.96	9.63	.2288	-2.91	12.03	.2770			.0332	.1728	9.61	9.13	-.0043			-3.43	11.17
60	10.15	9.83	.1978	-2.95	12.05	.2337			.0318	.1520	9.57	9.21	-.0071			-3.41	11.37
72	10.42	9.94	.1710	-3.00	12.02	.1942			.0333	.1679	9.50	9.25	-.0068			-3.45	11.41

ALTITUDE (KM) - 6

ALTITUDE (KM) - 7

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION 1932.4 - VALDEHERO
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/55 - 12/74
 ALTITUDE - 50.0

ALTITUDE (KM) - 50

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N
12	16.33	13.67	.1636	-3.75	15.40	584									
24	16.33	13.67	.1636	-3.75	15.40	584									
36	16.33	13.67	.1636	-3.75	15.40	584									
48	16.33	13.67	.1636	-3.75	15.40	584									
60	16.33	13.67	.1636	-3.75	15.40	584									
72	16.33	13.67	.1636	-3.75	15.40	584									

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	N
12	16.33	13.67	.1636	-3.75	15.40	584
24	16.33	13.67	.1636	-3.75	15.40	584
36	16.33	13.67	.1636	-3.75	15.40	584
48	16.33	13.67	.1636	-3.75	15.40	584
60	16.33	13.67	.1636	-3.75	15.40	584
72	16.33	13.67	.1636	-3.75	15.40	584

ALTITUDE (KM) - 50

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N
12	18.84	15.55	.1818	-4.15	16.52	564									
24	18.84	15.55	.1818	-4.15	16.52	564									
36	18.84	15.55	.1818	-4.15	16.52	564									
48	18.84	15.55	.1818	-4.15	16.52	564									
60	18.84	15.55	.1818	-4.15	16.52	564									
72	18.84	15.55	.1818	-4.15	16.52	564									

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	N
12	18.84	15.55	.1818	-4.15	16.52	564
24	18.84	15.55	.1818	-4.15	16.52	564
36	18.84	15.55	.1818	-4.15	16.52	564
48	18.84	15.55	.1818	-4.15	16.52	564
60	18.84	15.55	.1818	-4.15	16.52	564
72	18.84	15.55	.1818	-4.15	16.52	564

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

STATISTICS OF X, Y, XP, YP
 $X = U(AT, T)$
 $Y = V(AT, T)$
 $XP = U(AT, T + DT)$
 $YP = V(AT, T + DT)$

ALTITUDE (KH) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
21.43		17.56	.2138		-4.34	17.44	564						20.57	-5.08					
12		21.47	17.44	.7637	-4.28	17.46		21.47	17.44	.7637	-4.28	17.46	11.40	.1672	20.73	11.40	.1672	-4.94	12.31
24		21.49	17.34	.5344	-4.11	17.46		21.49	17.34	.5344	-4.11	17.46	14.84	.1883	20.92	14.84	.1883	-4.78	15.77
36		21.47	17.29	.3404	-3.99	17.51		21.47	17.29	.3404	-3.99	17.51	16.51	.1934	21.09	16.51	.1934	-4.63	16.90
48		21.56	17.32	.2423	-3.88	17.57		21.56	17.32	.2423	-3.88	17.57	17.01	.1931	21.13	17.01	.1931	-4.58	17.18
60		21.77	17.27	.1752	-3.87	17.68		21.77	17.27	.1752	-3.87	17.68	17.22	.1945	21.13	17.22	.1945	-4.55	17.28
72		22.09	17.39	.1105	-3.97	17.75		22.09	17.39	.1105	-3.97	17.75	17.39	.1986	21.19	17.39	.1986	-4.56	17.28

ALTITUDE (KH) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
24.40		18.63	.2311		-4.08	17.10	564						23.33	-4.86					
12		24.49	18.53	.7623	-4.01	17.13		24.49	18.53	.7623	-4.01	17.13	11.57	.1472	23.45	11.57	.1472	-4.69	11.63
24		24.52	18.39	.5683	-3.91	17.15		24.52	18.39	.5683	-3.91	17.15	15.29	.1997	23.67	15.29	.1997	-4.49	15.27
36		24.52	18.38	.3725	-3.75	17.24		24.52	18.38	.3725	-3.75	17.24	17.20	.2097	23.88	17.20	.2097	-4.36	15.56
48		24.59	18.31	.2546	-3.67	17.30		24.59	18.31	.2546	-3.67	17.30	17.95	.2119	23.99	17.95	.2119	-4.28	15.30
60		24.71	18.17	.1762	-3.63	17.42		24.71	18.17	.1762	-3.63	17.42	18.25	.2144	24.06	18.25	.2144	-4.25	15.68
72		25.02	18.17	.1152	-3.81	17.48		25.02	18.17	.1152	-3.81	17.48	18.43	.2176	24.14	18.43	.2176	-4.26	16.99

ALTIITUDE (KM) - 12

ALTIITUDE (KM) - 12

ALTIITUDE (KM) - 12

ALTIITUDE (KM) - 12

ALTITUDE (KM) - 13

ALTITUDE (KM) - 13

ALTITUDE (KM) - 13

ALTITUDE (KM) - 13

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	23.55	12.55	.2398	-2.51	11.53				564				22.73	-3.23		
12	23.67	12.60	.8341	-2.48	11.54	.7908	.7908	.2496	.2121	.2707	22.73	.0410	6.88	.0410	-3.11	7.05
24	23.80	12.70	.6939	-2.45	11.59	.5604	.5604	.2547	.1545	.2393	22.78	.1655	9.00	.1655	-2.96	9.55
36	23.03	12.72	.5387	-2.3	11.69	.3556	.3556	.2646	.1168	.1881	22.93	.2048	10.56	.2048	-2.84	10.77
48	23.84	12.74	.4097	-2.35	11.74	.2150	.2150	.2689	.1116	.1440	23.08	.2108	11.44	.2108	-2.74	11.24
60	23.86	12.70	.3188	-2.40	11.77	.1430	.1430	.2718	.1153	.1062	23.18	.2147	11.89	.2147	-2.69	11.37
72	24.01	12.65	.2466	-2.46	11.82	.0995	.0995	.2730	.1140	.0638	23.24	.2207	12.16	.2207	-2.68	11.42

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	20.49	10.09	.2340	-2.43	9.69				564				19.98	-3.09		
12	20.58	10.16	.8140	-2.37	9.69	.7907	.7907	.2421	.2257	.2473	19.98	.0313	5.84	.0313	-3.01	5.82
24	20.68	10.25	.6852	-2.32	9.73	.5675	.5675	.2516	.1850	.2200	19.99	.1352	7.33	.1352	-2.88	7.97
36	20.73	10.26	.5673	-2.25	9.79	.3746	.3746	.2562	.1425	.1805	20.05	.1843	8.30	.1843	-2.76	8.97
48	20.73	10.31	.4634	-2.26	9.85	.2379	.2379	.2585	.1439	.1273	20.15	.1934	8.94	.1934	-2.66	9.38
60	20.77	10.29	.3811	-2.29	9.89	.1737	.1737	.2628	.1503	.0651	20.22	.2010	9.32	.2010	-2.62	9.49
72	20.85	10.29	.2922	-2.35	9.96	.1233	.1233	.2679	.1464	.0456	20.25	.2062	9.64	.2062	-2.59	9.55

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	10.58	6.32	.2277	-2.23	5.49	.564								
24														
36														
48														
60														
72														

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	7.35	5.90	.2586	-2.25	4.45	.564								
24														
36														
48														
60														
72														

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	4.62	6.05	.2503	-2.11	3.83	584	5.01	3.59	.1049	-2.28	2.73	5.09	-2.42	5.01	3.59	.1049	-2.28	2.73
24	4.62	6.05	.2503	-2.11	3.83	584	4.95	3.30	.0605	-2.19	2.99	4.95	-2.19	4.95	3.30	.0605	-2.19	2.99
36	4.67	6.02	.2503	-2.10	3.90	584	4.93	3.39	.0921	-2.18	3.29	4.93	-2.18	4.93	3.39	.0921	-2.18	3.29
48	4.68	6.04	.2503	-2.10	3.96	584	4.82	3.49	.0841	-2.14	3.40	4.82	-2.14	4.82	3.49	.0841	-2.14	3.40
60	4.74	6.22	.2503	-2.08	3.97	584	4.80	3.27	.1090	-2.14	3.45	4.80	-2.14	4.80	3.27	.1090	-2.14	3.45
72	4.74	6.23	.2503	-2.08	3.97	584	4.80	3.27	.1090	-2.14	3.45	4.80	-2.14	4.80	3.27	.1090	-2.14	3.45

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.46	6.28	.2192	-2.00	3.50	584	2.96	4.03	.1091	-2.15	2.65	3.08	-2.26	2.96	4.03	.1091	-2.15	2.65
24	2.43	6.25	.2192	-2.00	3.50	584	2.96	4.10	.0219	-2.10	2.73	3.08	-2.26	2.96	4.10	.0219	-2.10	2.73
36	2.45	6.24	.2192	-2.00	3.50	584	2.91	4.52	.0368	-2.09	2.93	3.08	-2.26	2.91	4.52	.0368	-2.09	2.93
48	2.45	6.25	.2192	-2.00	3.50	584	2.93	4.59	.0602	-2.09	2.98	3.08	-2.26	2.93	4.59	.0602	-2.09	2.98
60	2.53	6.51	.2192	-1.91	3.46	584	2.78	5.06	.0730	-2.06	3.15	3.08	-2.26	2.78	5.06	.0730	-2.06	3.15
72	2.52	6.53	.2192	-1.88	3.48	584	2.78	5.29	.0953	-2.05	3.18	3.08	-2.26	2.78	5.29	.0953	-2.05	3.18

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R ² (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	1.12	5.70	.8436	-2.26	3.32	.6165	.1493	.1815	.1566	1.77	3.60	-.0391	-2.37	2.60
36	48	1.16	6.68	.8134	-2.24	3.32	.5340	.1552	.2274	.1190	1.74	3.91	-.0529	-2.35	2.77
60	72	1.12	6.64	.7812	-2.20	3.29	.4935	.1654	.2258	.1162	1.76	4.19	-.0274	-2.35	2.65
		1.12	6.62	.7449	-2.16	3.27	.4257	.1693	.2616	.1005	1.74	4.48	-.0495	-2.33	2.94
		1.14	6.64	.7127	-2.12	3.27	.3770	.1812	.2452	.0982	1.70	4.71	-.0133	-2.34	3.02
		1.12	6.64	.6524	-2.09	3.29	.3361	.1838	.2500	.0516	1.71	5.07	.0188	-2.32	3.06

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
1.90	-2.45

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R ² (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	.34	7.08	.1576	-2.11	3.29	.6352	.1708	.1781	.1431	1.19	3.68	.0200	-2.12	2.53
36	48						.5777	.1753	.2187	.0730	1.16	4.20	.0422	-2.11	2.65
60	72						.4071	.1861	.1559	.0833	1.15	4.32	.0795	-2.13	2.78
							.3890	.1937	.1927	.0837	1.11	4.65	.0577	-2.11	2.97
							.3161	.1980	.1922	.0674	1.03	4.97	.0431	-2.12	2.98
										.0475	1.05	5.05	.0748	-2.12	3.09

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
1.33	-2.19

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
		.07	7.71	.1225	-1.37	3.50							1.30	-1.96		
12		.04	7.67	.8590	-1.96	3.46	.6690	.1149	.1363	.0922	1.16	3.95	.0258		-1.94	2.59
24		.05	7.67	.8355	-1.94	3.45	.5767	.1024	.1543	.0279	1.13	4.20	.0402		-1.92	2.83
36		.06	7.59	.8238	-1.93	3.44	.4772	.1028	.1503	.0399	1.11	4.35	.0385		-1.93	3.05
48		.09	7.60	.7772	-1.92	3.45	.3723	.1038	.1461	.0204	1.04	4.83	.0531		-1.93	3.22
60		.15	7.67	.7447	-1.86	3.44	.3295	.1021	.1522	.0198	.95	5.13	.0432		-1.94	3.27
72		.20	7.71	.7092	-1.82	3.43	.2747	.1030	.1599	.0325	.87	5.42	.0293		-1.94	3.33

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
		-.13	8.56	.1103	-1.90	3.57							1.40	-1.88		
12		-.10	8.51	.8944	-1.89	3.55	.6596	.1066	.1226	.1119	1.22	3.82	-.0304		-1.86	2.68
24		-.09	8.49	.8701	-1.87	3.50	.5643	.0960	.1500	.0429	1.17	4.20	.0057		-1.85	2.93
36		-.06	8.43	.8515	-1.85	3.48	.5117	.0967	.1565	.0373	1.14	4.47	-.0009		-1.85	3.04
48		-.06	8.47	.8147	-1.86	3.47	.3895	.0952	.1365	.0318	1.08	4.95	.0311		-1.85	3.27
60		.01	8.53	.7813	-1.81	3.47	.3244	.0907	.1485	.0265	.97	5.33	.0138		-1.85	3.35
72		.04	8.59	.7501	-1.75	3.47	.2533	.0951	.1507	.0382	.90	5.65	.0082		-1.86	3.42

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1921M) - VASCOBRO
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		.40	9.66	.1468	-1.80	4.02	564						2.18	-1.81					
12		.40	9.64	.9052	-1.79	3.98		.6654	.1407	.1493	.1422				2.01	4.10	.0058	-1.77	2.99
24		.42	9.64	.8819	-1.81	3.92		.5669	.1327	.1882	.0957				1.96	4.55	-.0194	-1.72	3.28
36		.41	9.62	.8619	-1.79	3.89		.4981	.1297	.1723	.0901				1.93	4.90	.0200	-1.73	3.46
48		.36	9.60	.8247	-1.76	3.86		.3945	.1252	.1494	.0713				1.92	5.46	.0757	-1.75	3.68
60		.44	9.68	.8003	-1.72	3.84		.3497	.1242	.1431	.0661				1.81	5.78	.0779	-1.76	3.75
72		.44	9.74	.7740	-1.64	3.83		.2666	.1322	.1400	.0711				1.75	6.11	.0764	-1.77	3.85

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 27

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		1.58	11.30	.1503	-1.69	4.38	564						3.49	-1.70					
12		1.58	11.25	.9112	-1.69	4.33		.6851	.1449	.1565	.1433				3.32	4.65	.0001	-1.63	3.18
24		1.57	11.28	.8920	-1.69	4.30		.5802	.1425	.1647	.1061				3.30	5.10	.0419	-1.63	3.55
36		1.56	11.31	.8639	-1.66	4.27		.4819	.1392	.1624	.0841				3.25	5.68	.0605	-1.64	3.82
48		1.52	11.32	.8257	-1.60	4.25		.3810	.1343	.1533	.0747				3.22	6.36	.0714	-1.65	4.03
60		1.58	11.43	.8020	-1.57	4.24		.3569	.1330	.1307	.0449				3.11	6.74	.1004	-1.67	4.08
72		1.58	11.49	.7821	-1.53	4.25		.2874	.1417	.1281	.0773				3.05	7.04	.0902	-1.68	4.18

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
2	1/65 - 12/74	0	90.0	.69	3.05	-.5499	-.78	3.49	564
2	1/65 - 12/74	1	90.0	.23	4.28	-.1941	-1.60	7.38	564
2	1/65 - 12/74	2	90.0	2.24	5.25	-.1149	-2.02	8.58	564
2	1/65 - 12/74	3	90.0	4.96	6.60	-.0159	-2.87	9.70	564
2	1/65 - 12/74	4	90.0	7.48	8.05	.0041	-3.14	10.65	564
2	1/65 - 12/74	5	90.0	9.77	9.39	.0215	-3.18	11.60	564
2	1/65 - 12/74	6	90.0	11.69	10.59	.0738	-3.20	12.91	564
2	1/65 - 12/74	7	90.0	13.87	12.12	.1176	-3.38	14.21	564
2	1/65 - 12/74	8	90.0	16.25	13.6	.16	-3.75	15.40	564
2	1/65 - 12/74	9	90.0	18.84	15.35	.18.8	-4.15	16.52	564
2	1/65 - 12/74	10	90.0	21.43	17.75	.2138	-4.34	17.44	564
2	1/65 - 12/74	11	90.0	24.40	18.83	.2311	-4.08	17.10	564
2	1/65 - 12/74	12	90.0	26.28	17.26	.2387	-3.50	15.75	564
2	1/65 - 12/74	13	90.0	25.44	14.65	.2665	-2.88	13.26	564
2	1/65 - 12/74	14	90.0	23.55	12.55	.2398	-2.51	11.53	564
2	1/65 - 12/74	15	90.0	22.49	10.09	.2340	-2.43	9.69	564
2	1/65 - 12/74	16	90.0	17.59	8.52	.2630	-2.22	8.40	564
2	1/65 - 12/74	17	90.0	14.25	7.29	.2425	-2.26	6.81	564
2	1/65 - 12/74	18	90.0	10.53	6.32	.2277	-2.23	5.49	564
2	1/65 - 12/74	19	90.0	7.35	5.90	.2586	-2.25	4.45	564
2	1/65 - 12/74	20	90.0	4.62	6.05	.2503	-2.11	3.83	564
2	1/65 - 12/74	21	90.0	2.45	6.28	.2192	-2.00	3.50	564
2	1/65 - 12/74	22	90.0	1.13	6.72	.1555	-2.29	3.32	564
2	1/65 - 12/74	23	90.0	.34	7.03	.1576	-2.11	3.29	564
2	1/65 - 12/74	24	90.0	.07	7.71	.1225	-1.97	3.50	564
2	1/65 - 12/74	25	90.0	-.13	8.56	.1103	-1.90	3.57	564
2	1/65 - 12/74	26	90.0	1.40	9.66	.1468	-1.80	4.02	564
2	1/65 - 12/74	27	90.0	1.58	11.30	.1503	-1.69	4.38	564

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. YP
12	1.83	2.77	-.2722	-1.85	3.47	.3540	-1.84	3.48	620	1.84	2.55	-.5455	-1.85	3.16
24	1.80	2.79	-.5054	-1.83	3.45	.4123				1.85	2.39	-.5053	-1.86	3.16
36	1.82	2.81	-.4000	-1.83	3.40	.0460				1.83	2.32	-.5468	-1.84	3.39
48	1.82	2.81	-.4049	-1.82	3.40	.1828				1.84	2.53	-.5786	-1.84	3.43
60	1.81	2.82	-.4001	-1.81	3.39	-.0300				1.83	2.53	-.5429	-1.84	3.40
72	1.80	2.81	-.4060	-1.81	3.38	.1468				1.85	2.53	-.5662	-1.85	3.43

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. YP
12	1.13	4.00	-.0862	-3.39	6.29	.6797	-3.35	6.35	620	.97	3.35	-.0117	-3.55	4.51
24	1.05	4.01	-.2950	-3.37	6.21	.3943				1.07	3.73	-.0571	-3.52	5.68
36	1.11	4.04	-.1856	-3.41	6.11	.1526				1.09	3.87	-.0960	-3.48	6.16
48	1.10	4.00	-.1369	-3.39	6.11	.0640				1.09	3.94	-.1019	-3.45	6.26
60	1.09	3.97	-.1175	-3.38	6.10	.0067				1.09	3.97	-.1021	-3.43	6.30
72	1.02	3.97	-.0964	-3.41	6.09	.0303				1.10	3.98	-.0952	-3.40	6.32

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
		3.21	5.00	-.0330	-3.30	7.48	620						2.80	-3.42	
DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	3.15	3.15	4.96	.6284	-3.30	7.42	.7245	-.0391	.0824	-.2171	3.00	3.77	.1084	-3.45	5.09
24	3.09	3.09	4.92	.4397	-3.26	7.31	.4031	-.0391	.1104	-.2391	3.11	4.35	.0113	-3.42	6.78
36	3.24	3.07	4.94	.2587	-3.25	7.19	.1752	-.0464	.1042	-.1883	3.16	4.75	-.0303	-3.38	7.31
48	3.07	3.07	4.86	.2032	-3.25	7.20	.0616	-.0539	.0994	-.1128	3.16	4.87	-.0480	-3.36	7.42
60	3.05	3.05	4.84	.1095	-3.25	7.20	.0322	-.0534	.1088	-.0566	3.19	4.97	-.0436	-3.35	7.43
72	2.99	2.99	4.82	.0967	-3.28	7.19	.0574	-.0676	.1205	-.0419	3.19	4.98	-.0430	-3.35	7.41

ALTITUDE (KM) - 3

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

		MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N			GIVEN X		GIVEN Y		
		6.08	6.64	-.0176	-3.51	8.53	620			5.77		-3.48		
DT	HR	MEAN XP	S.D. XP	MEAN YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
12	6.02	6.63	.7238	-3.52	.7240	-.0236	.0628	-.1464	5.90	4.50	.0664	-3.51	5.85	
24	5.95	6.66	.5200	-3.48	.4389	-.0259	.0764	-.1963	5.99	5.54	.0312	-3.53	7.63	
36	5.95	6.68	.3502	-3.46	.2292	-.0275	.0873	-.1962	6.02	6.15	-.0159	-3.53	8.27	
48	5.96	6.60	.2731	-3.51	.1284	-.0406	.0865	-.1047	6.03	6.36	-.0305	-3.53	8.42	
60	5.95	6.55	.1915	-3.54	.1219	-.0450	.0739	-.0561	6.04	6.51	-.0279	-3.52	8.44	
72	5.89	6.56	.1508	-3.59	.1452	-.0512	.0597	-.0415	6.06	6.56	-.0221	-3.50	8.42	

ALTITUDE (KM) - 4

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP				
DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP			
	11.05	10.20	.0475	-3.60	11.04	620								
								</						

GLABORAPATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION 2220 - WANDERBEG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE 30.0

ALTITUDE (M) - 8

GLABORAPATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (1,1)	MEAN Y	S.D. Y	N
DT	12.13	11.89	.0024	-3.81	12.21	820
HP	MEAN XP	S.D. XP	P (1,XP)	MEAN YP	S.D. YP	P (XP,Y)
12	11.52	7.259	.0024	-3.85	12.24	.0024
24	11.52	7.259	.0024	-3.75	12.24	.0024
36	11.52	7.259	.0024	-3.75	12.24	.0024
48	11.52	7.259	.0024	-3.77	12.24	.0024
60	11.52	7.259	.0024	-3.77	12.24	.0024
72	11.52	7.259	.0024	-3.78	12.24	.0024

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
DT	12.13	11.89	.0024	-3.81	12.21
HP	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
12	11.52	7.259	.0024	-3.85	12.24
24	11.52	7.259	.0024	-3.75	12.24
36	11.52	7.259	.0024	-3.75	12.24
48	11.52	7.259	.0024	-3.77	12.24
60	11.52	7.259	.0024	-3.77	12.24
72	11.52	7.259	.0024	-3.78	12.24

ALTITUDE (M) - 7

GLABORAPATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (1,1)	MEAN Y	S.D. Y	N
DT	12.21	13.28	.0023	-4.11	13.73	820
HP	MEAN XP	S.D. XP	P (1,XP)	MEAN YP	S.D. YP	P (XP,Y)
12	11.52	7.259	.0024	-3.85	12.24	.0024
24	11.52	7.259	.0024	-3.75	12.24	.0024
36	11.52	7.259	.0024	-3.75	12.24	.0024
48	11.52	7.259	.0024	-3.77	12.24	.0024
60	11.52	7.259	.0024	-3.77	12.24	.0024
72	11.52	7.259	.0024	-3.78	12.24	.0024

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
DT	12.21	13.28	.0023	-4.11	13.73
HP	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
12	11.52	7.259	.0024	-3.85	12.24
24	11.52	7.259	.0024	-3.75	12.24
36	11.52	7.259	.0024	-3.75	12.24
48	11.52	7.259	.0024	-3.77	12.24
60	11.52	7.259	.0024	-3.77	12.24
72	11.52	7.259	.0024	-3.78	12.24

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	24	17.12	14.49	.7559	-4.38	15.21	.0938	-4.32	15.21	.1782	.6418	.0850	16.95	9.45	.2713	-4.16	11.63
36	48	17.10	14.55	.5147	-4.32	15.20	.0199	-4.27	15.20	.1795	.3374	-.0282	17.00	12.29	.2635	-4.28	14.27
60	72	17.19	14.48	.3645	-4.27	15.13	.0098	-4.30	15.13	.1803	.1541	-.0445	17.01	13.39	.2113	-4.35	14.98
		17.25	14.26	.2776	-4.30	15.21	.0141	-4.26	15.21	.1761	.0453	-.0471	17.02	13.84	.1880	-4.38	15.15
		17.25	14.13	.2313	-4.26	15.33	.0293	-4.26	15.33	.1695	.0412	-.0384	17.05	14.04	.1810	-4.39	15.15
		17.18	13.99	.1771	-4.30	15.43	.0171	-4.30	15.43	.1526	.0726	-.0206	17.09	14.24	.1831	-4.38	15.13

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
16.86	-4.02

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	24	19.07	15.33	.2137	-4.65	16.56	.1091	-4.64	16.56	.2136	.6524	.1116	18.78	9.91	.3356	-4.34	12.54
36	48	19.08	15.46	.7611	-4.60	16.51	.0228	-4.60	16.51	.2135	.3304	-.0018	18.84	12.94	.3025	-4.49	15.61
60	72	19.18	15.53	.5239	-4.55	16.54	.0085	-4.55	16.54	.2155	.1197	-.0252	18.86	14.12	.2513	-4.59	16.43
		19.30	15.48	.3744	-4.60	16.63	.0000	-4.60	16.63	.2032	.0184	-.0312	18.86	14.57	.2267	-4.64	16.56
		19.27	15.32	.2960	-4.55	16.67	.0090	-4.55	16.67	.1989	.0176	-.0271	18.91	14.87	.2195	-4.65	16.56
		19.21	15.19	.2315	-4.59	16.68	.0042	-4.59	16.68	.1818	.0410	-.0097	18.96	15.05	.2207	-4.63	16.55
		19.21	15.04	.1868	-4.59	16.68	.0042	-4.59	16.68	.1818	.0410	-.0097	18.96	15.05	.2207	-4.63	16.55

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
18.73	-4.18

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
	21.43	15.64	.2275	-4.66	17.35	620	GIVEN X	GIVEN Y				
							21.06	-4.14				
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP		MEAN XP	R (XP, YP)	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	21.48	15.81	.7704	-4.66	17.45		21.10	.3221	9.97	.3221	-4.29	13.00
24	21.51	15.87	.5539	-4.66	17.45		21.14	.3132	12.96	.3132	-4.45	16.34
36	21.63	15.84	.4042	-4.65	17.47		21.15	.2739	14.25	.2739	-4.56	17.20
48	21.73	15.73	.3205	-4.63	17.50		21.17	.2526	14.77	.2526	-4.62	17.34
60	21.75	15.64	.2456	-4.64	17.52		21.22	.2406	15.13	.2406	-4.63	17.35
72	21.69	15.44	.2003	-4.60	17.46		21.28	.2419	15.31	.2419	-4.60	17.32

ALTITUDE (KM) - 11

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
	23.72	15.07	.2201	-4.44	16.60	620	GIVEN X	GIVEN Y				
							23.52	-3.96				
DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP		MEAN XP	R (XP, YP)	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	23.75	15.24	.7955	-4.46	16.69		23.55	.2988	9.12	.2988	-4.07	11.82
24	23.75	15.32	.5875	-4.45	16.71		23.57	.2104	12.19	.2104	-4.21	15.26
36	23.82	15.25	.4421	-4.49	16.70		23.56	.2890	13.49	.2890	-4.32	16.26
48	23.89	15.21	.3453	-4.52	16.70		23.56	.2812	14.11	.2812	-4.39	16.55
60	23.92	15.17	.2795	-4.45	16.67		23.59	.2427	14.45	.2427	-4.41	16.58
72	23.83	15.03	.2301	-4.42	16.65		23.63	.2368	14.66	.2368	-4.40	16.57

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X _P	S.D. X _P	R (X,X _P)	MEAN Y _P	S.D. Y _P	R (X,Y)	MEAN Y	S.D. Y	N	R (Y,X)	MEAN X _P	S.D. X _P	R (X _P ,Y _P)	MEAN Y _P	S.D. Y _P	GIVEN X	GIVEN Y	R (X _P ,Y _P)	MEAN Y _P	S.D. Y _P
12	25.03	13.95	.8132	-3.56	15.13	.7533	.4234	.1822	.0553	.2114	25.08	7.98	.2591	-3.35	9.83			.2591	-3.35	9.83
24	25.02	14.02	.6795	-3.62	15.18	.1698	.1698	-.0395	-.0395	.1411	25.07	10.86	.2931	-3.42	13.52			.2931	-3.42	13.52
36	25.02	13.89	.4137	-3.65	15.10	.0286	.0286	-.0933	-.0933	.0692	25.05	12.19	.2792	-3.50	14.72			.2792	-3.50	14.72
48	25.08	13.69	.3705	-3.67	15.09	.0030	.0030	-.0971	-.0971	.0468	25.02	12.86	.2501	-3.55	14.97			.2501	-3.55	14.97
60	25.12	13.87	.3069	-3.63	15.10	.0030	.0030	-.0772	-.0772	.0387	25.01	13.18	.2301	-3.56	15.01			.2301	-3.56	15.01
72	25.06	13.81	.2582	-3.62	15.08	.0175	.0175	-.0704	-.0704	.0505	25.04	13.37	.2203	-3.56	15.02			.2203	-3.56	15.02

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)	GIVEN X	GIVEN Y	S.D. XP	MEAN YP	S.D. YP
12	24.75	11.79	.1699	-2.74	12.93	620	24.75	11.79	.1699	-2.74	12.93	620	25.02	-2.54	6.43	-2.60	8.11
24	24.72	11.87	.6731	.4568	.1511	.0648	24.76	11.91	.8350	-2.74	12.98	.2020	24.76	24.98	8.69	-2.67	11.41
36	24.71	11.77	.5161	.1977	.1341	-.0783	24.72	11.87	.6731	-2.77	12.99	.1557	24.72	24.96	10.09	-2.73	12.60
48	24.75	11.71	.4131	.0393	.1145	-.0789	24.75	11.71	.4131	-2.78	12.83	.0535	24.75	24.85	10.74	-2.76	12.87
60	24.75	11.68	.3481	-.0013	.0918	-.0639	24.75	11.68	.2952	-2.77	12.85	.0534	24.75	24.85	11.05	-2.76	12.90
72	24.74	11.64	.2952	.0102	.0687	-.0523	24.74	11.64	.2952	-2.79	12.90	.0463	24.74	24.84	11.25	-2.76	12.91

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VAJENBERG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)	MEAN X	S.D. X	R (XP,YP)	MEAN Y	S.D. Y	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	23.32	10.34	.2158	-1.9	10.95	620	23.30	10.37	.8141	-1.88	10.98	.7726	23.32	10.34	.2158	-1.9	10.95	.2328	23.30	10.37	.8141	-1.88	10.98
24							23.18	10.24	.6684	-1.83	10.53	.4852	23.18	10.24	.6684	-1.83	10.53	.1916	23.18	10.24	.6684	-1.83	10.53
36							23.16	10.15	.5249	-1.83	10.83	.2401	23.16	10.15	.5249	-1.83	10.83	.1354	23.16	10.15	.5249	-1.83	10.83
48							23.17	10.08	.4310	-1.42	10.85	.0879	23.17	10.08	.4310	-1.42	10.85	.0775	23.17	10.08	.4310	-1.42	10.85
60							23.18	10.05	.3449	-1.83	10.85	.0415	23.18	10.05	.3449	-1.83	10.85	.0574	23.18	10.05	.3449	-1.83	10.85
72							23.12	10.03	.2306	-1.91	10.87	.0425	23.12	10.03	.2306	-1.91	10.87	.0356	23.12	10.03	.2306	-1.91	10.87

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
23.80	-1.62	.1517	23.73	5.95	.1517	-1.72	5.34
		.2534	23.74	7.88	.2534	-1.81	9.55
		.2596	23.57	8.79	.2596	-1.88	12.51
		.2634	23.53	9.33	.2634	-1.92	13.88
		.2577	23.54	9.70	.2577	-1.95	13.90
		.2470	23.52	9.89	.2470	-1.95	13.91

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)	MEAN X	S.D. X	R (XP,YP)	MEAN Y	S.D. Y	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	20.81	8.63	.1823	-1.51	8.92	620	20.80	8.57	.8021	-1.55	8.98	.7752	20.81	8.63	.1823	-1.51	8.92	.1750	20.80	8.57	.8021	-1.55	8.98
24							20.75	8.61	.6730	-1.56	8.98	.5095	20.75	8.61	.6730	-1.56	8.98	.1197	20.75	8.61	.6730	-1.56	8.98
36							20.73	8.59	.5261	-1.56	8.98	.3321	20.73	8.59	.5261	-1.56	8.98	.0598	20.73	8.59	.5261	-1.56	8.98
48							20.74	8.52	.4420	-1.54	8.95	.2737	20.74	8.52	.4420	-1.54	8.95	.0254	20.74	8.52	.4420	-1.54	8.95
60							20.75	8.51	.3539	-1.51	8.95	.0947	20.75	8.51	.3539	-1.51	8.95	.0074	20.75	8.51	.3539	-1.51	8.95
72							20.72	8.47	.2356	-1.49	8.93	.0708	20.72	8.47	.2356	-1.49	8.93	.0129	20.72	8.47	.2356	-1.49	8.93

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
21.42	-1.32	.1007	21.31	5.13	.1007	-1.32	5.53
		.2572	21.27	6.33	.2572	-1.41	7.57
		.2194	21.20	7.17	.2194	-1.47	8.56
		.2215	21.12	7.74	.2215	-1.53	8.82
		.2053	21.05	8.05	.2053	-1.54	8.93
		.2034	21.03	8.20	.2034	-1.55	8.88

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
	18.03	7.83	.1355	-1.18	7.52	620						18.85	-1.18	
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	18.04	7.88	.7864	-1.20	7.58	.7507	.1208	.1213	.1121	18.66	4.84	.0669	-1.13	4.96
24	18.02	7.93	.5322	-1.20	7.61	.5887	.1161	.0716	.0936	18.60	5.65	.1362	-1.15	6.47
36	18.06	7.92	.5830	-1.19	7.53	.2843	.1365	.0070	.0262	18.49	6.36	.1821	-1.19	7.21
48	18.05	7.87	.4834	-1.18	7.59	.1273	.0838	-.0428	-.0251	18.41	6.83	.1907	-1.22	7.45
60	18.06	7.85	.4172	-1.17	7.58	.0403	.0568	-.0555	-.0435	18.35	7.10	.1788	-1.22	7.50
72	18.01	7.81	.3628	-1.16	7.63	.0171	.0432	-.0768	-.0180	18.33	7.29	.1767	-1.24	7.49

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
	15.26	7.30	.0862	-1.36	6.58	620						15.15	-1.40	
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	15.26	7.30	.7667	-1.38	6.61	.7343	.0769	.1029	.0507	15.94	4.68	.0309	-1.34	4.45
24	15.20	7.27	.6619	-1.36	6.61	.5014	.0809	.0657	.0064	15.89	5.46	.1014	-1.36	5.69
36	15.20	7.24	.5313	-1.35	6.60	.2864	.0690	-.0136	-.0235	15.83	5.87	.1454	-1.41	6.30
48	15.24	7.23	.5212	-1.33	6.59	.1518	.0509	-.0793	-.0342	15.74	6.21	.1636	-1.45	6.48
60	15.27	7.24	.4686	-1.32	6.60	.0642	.0219	-.0884	-.0391	15.68	6.44	.1493	-1.44	6.54
72	15.22	7.19	.4254	-1.31	6.63	.0433	.0018	-.1029	-.0317	15.66	6.60	.1462	-1.46	6.54

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (NM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	11.75	6.35	.7936	-1.19	5.01	.0414	-1.20	5.01	620	12.50	4.23	.0133	-1.30	3.45
24	11.74	6.36	.6513	-1.20	5.00		.5519	.0437		12.44	4.77	.0385	-1.28	4.15
36	11.70	6.31	.6021	-1.19	4.99		.3501	.0423		12.41	5.07	.0362	-1.27	4.70
48	11.75	6.28	.5558	-1.17	4.97		.2202	.0275		12.35	5.27	.0373	-1.27	4.83
60	11.74	6.25	.4958	-1.17	4.97		.1372	.0044		12.30	5.51	.0974	-1.27	4.55
72	11.71	6.23	.4615	-1.15	4.98		.0897	-.0221		12.27	5.55	.0814	-1.25	4.59

ALTITUDE (NM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	8.64	6.07	.7823	-1.29	4.19	.0253	-1.26	4.18	620	9.30	2.80	.0378	-1.28	3.00
24	8.63	6.06	.7291	-1.31	4.20		.5705	.0167		9.27	4.07	.0482	-1.25	3.53
36	8.61	6.02	.6775	-1.29	4.19		.4240	.0123		9.24	4.45	.0544	-1.27	3.79
48	8.62	6.03	.6415	-1.27	4.17		.3570	.0075		9.20	4.65	.0545	-1.27	3.98
60	8.60	6.03	.5943	-1.28	4.21		.2270	-.0225		9.18	4.87	.0641	-1.28	4.07
72	8.58	6.00	.5522	-1.25	4.22		.1532	-.0403		9.16	5.04	.0853	-1.31	4.13

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION 1922(4) - JANUARY
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/15 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 20

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HP	MEAN X	S.D. X	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (YP, Y)	MEAN YP	S.D. YP	MEAN Y	S.D. Y	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	24	6.44	6.24	-0.061	-1.28	3.83	623	7.27	-1.50										
12	24	6.45	6.23																
24	24	6.45	6.23																
36	24	6.45	6.23																
48	24	6.45	6.23																
60	24	6.45	6.23																
72	24	6.45	6.23																

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HP	MEAN X	S.D. X	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (YP, Y)	MEAN YP	S.D. YP	MEAN Y	S.D. Y	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	24	6.45	6.23																
24	24	6.45	6.23																
36	24	6.45	6.23																
48	24	6.45	6.23																
60	24	6.45	6.23																
72	24	6.45	6.23																

ALTITUDE (M) - 20

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HP	MEAN X	S.D. X	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (YP, Y)	MEAN YP	S.D. YP	MEAN Y	S.D. Y	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	24	4.60	6.72	-0.038	-1.27	3.43	620	5.58	-1.46										
12	24	4.67	6.68																
24	24	4.67	6.68																
36	24	4.67	6.68																
48	24	4.67	6.68																
60	24	4.67	6.68																
72	24	4.67	6.68																

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HP	MEAN X	S.D. X	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (YP, Y)	MEAN YP	S.D. YP	MEAN Y	S.D. Y	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	24	4.67	6.68																
24	24	4.67	6.68																
36	24	4.67	6.68																
48	24	4.67	6.68																
60	24	4.67	6.68																
72	24	4.67	6.68																

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION 192214 - VANDENBERG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (M) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN	S.D.	P	MEAN	S.D.	P	MEAN	S.D.	P	MEAN	S.D.	P	MEAN	S.D.	P	MEAN	S.D.	P	MEAN
MP	XP	Y	XP	Y	Y	XP	Y	Y	XP	XP	YP	XP	YP	YP	YP	XP	YP	YP	YP
12	3.17	7.02	.8542	-1.28	3.07	.5721	.4718	.0028	.0145	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
24	3.18	6.93	.8245	-1.28	3.09	.4718	.4718	.0028	.0145	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
36	3.20	6.93	.7839	-1.07	3.11	.2324	.2324	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
48	3.21	6.93	.7429	-1.05	3.12	.2321	.2321	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
60	3.18	6.93	.7203	-1.05	3.15	.1575	.1575	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
72	3.24	6.68	.6793	-1.05	3.15	.1587	.1587	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001

ALTITUDE (M) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	MEAN	S.D.	P	MEAN	S.D.	P	MEAN	S.D.	P	MEAN	S.D.	P	MEAN	S.D.	P	MEAN	S.D.	P	MEAN
MP	XP	Y	XP	Y	Y	XP	Y	Y	XP	XP	YP	XP	YP	YP	YP	XP	YP	YP	YP
12	2.97	7.76	.8542	-0.83	3.23	.5630	.4503	.0028	.0145	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
24	2.98	7.72	.8443	-0.82	3.21	.4503	.4503	.0028	.0145	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
36	2.98	7.68	.8190	-0.81	3.21	.3242	.3242	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
48	2.91	7.65	.7829	-0.78	3.21	.1870	.1870	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
60	3.01	7.61	.7573	-0.78	3.21	.1852	.1852	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001
72	3.07	7.58	.7416	-0.78	3.21	.1875	.1875	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001	.0001

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1922-4) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 50.0

ALTITUDE (PM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (Y, X)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
							GIVEN X	GIVEN Y	P	MEAN XP	S.D. XP	S.D. YP
DT	3.30	8.74	1327	-54	3.23	620	4.95	-52				
12	3.27	8.52	1328	-53	3.23	1852	3.63	0.118		4.73	3.63	2.76
24	3.27	8.52	1328	-53	3.23	1852	4.71	0.258		4.71	4.15	2.59
36	3.27	8.52	1328	-53	3.23	1852	4.43	0.258		4.55	4.43	3.14
48	3.27	8.52	1328	-53	3.23	1852	4.56	0.122		4.56	4.56	3.24
60	3.27	8.52	1328	-53	3.23	1852	5.35	0.170		4.50	5.35	3.27
72	3.27	8.52	1328	-53	3.23	1852	5.51	0.225		4.45	5.51	3.27

ALTITUDE (PM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (Y, X)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
							GIVEN X	GIVEN Y	P	MEAN XP	S.D. XP	S.D. YP
DT	3.68	9.66	1228	-30	3.23	620	5.63	-22				
12	3.27	8.52	1328	-53	3.23	1852	3.25	0.084		5.42	3.25	2.80
24	3.27	8.52	1328	-53	3.23	1852	4.30	0.243		5.37	4.30	2.59
36	3.27	8.52	1328	-53	3.23	1852	5.25	0.127		5.25	5.25	3.15
48	3.27	8.52	1328	-53	3.23	1852	5.73	0.222		5.13	5.73	3.23
60	3.27	8.52	1328	-53	3.23	1852	5.73	0.222		5.13	5.73	3.23
72	3.27	8.52	1328	-53	3.23	1852	5.73	0.222		5.13	5.73	3.27

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 99.0

ALTITUDE (KM) - 26

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)	MEAN X GIVEN Y	S.D. X GIVEN Y	MEAN Y GIVEN X	S.D. Y GIVEN X	R (XP,YP)	MEAN XP	S.D. XP	R (YP,X)	MEAN YP	S.D. YP
12	4.50	10.30	.9141	-.18	3.27	620	4.50	10.30	.9141	-.18	3.27	.3597	6.32	4.14	0.83	-.05	2.63	6.32	4.14	0.83	-.05	2.63
24	4.57	10.24	.8955	-.18	3.26		4.57	10.24	.8955	-.18	3.26	.3442	6.24	4.56	.0792	-.03	2.90	6.24	4.56	.0792	-.03	2.90
36	4.65	10.18	.8586	-.20	3.25		4.65	10.18	.8586	-.20	3.25	.3451	6.09	5.24	.1859	-.05	3.08	6.09	5.24	.1859	-.05	3.08
48	4.73	10.10	.8228	-.20	3.26		4.73	10.10	.8228	-.20	3.26	.3471	5.98	5.70	.2442	-.06	3.17	5.98	5.70	.2442	-.06	3.17
60	4.75	10.03	.8015	-.21	3.25		4.75	10.03	.8015	-.21	3.25	.3531	5.92	6.08	.3037	-.08	3.21	5.92	6.08	.3037	-.08	3.21
72	4.84	9.94	.7632	-.22	3.25		4.84	9.94	.7632	-.22	3.25	.3533	5.80	6.54	.3381	-.09	3.22	5.80	6.54	.3381	-.09	3.22

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 27

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (YP,X)	MEAN X GIVEN Y	S.D. X GIVEN Y	MEAN Y GIVEN X	S.D. Y GIVEN X	R (XP,YP)	MEAN XP	S.D. XP	R (YP,X)	MEAN YP	S.D. YP
12	5.63	11.39	.4227	.04	3.57	620	5.63	11.39	.4227	.04	3.57	.4587	7.73	4.20	.0738	.21	2.59	7.73	4.20	.0738	.21	2.59
24	5.70	11.34	.4263	.05	3.53		5.70	11.34	.4263	.05	3.53	.4488	7.60	4.98	.1749	.22	3.02	7.60	4.98	.1749	.22	3.02
36	5.77	11.25	.4051	.05	3.53		5.77	11.25	.4051	.05	3.53	.4488	7.47	5.64	.2659	.23	3.28	7.47	5.64	.2659	.23	3.28
48	5.86	11.15	.3814	.03	3.53		5.86	11.15	.3814	.03	3.53	.4555	7.36	6.15	.3426	.22	3.40	7.36	6.15	.3426	.22	3.40
60	5.93	11.04	.3512	.01	3.52		5.93	11.04	.3512	.01	3.52	.4598	7.25	6.80	.3939	.20	3.45	7.25	6.80	.3939	.20	3.45
72	5.97	10.91	.3298	.01	3.52		5.97	10.91	.3298	.01	3.52	.4536	7.12	7.39	.3993	.19	3.47	7.12	7.39	.3993	.19	3.47

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (9321-1) - VALDEBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
3	1/55 - 12/74	0	90.0	1.83	2.78	-.5703	-1.84	3.48	820
3	1/55 - 12/74	1	90.0	1.13	4.00	-.0852	-3.35	6.35	820
3	1/55 - 12/74	2	90.0	3.21	5.00	-.0330	-3.30	7.48	820
3	1/55 - 12/74	3	90.0	6.53	5.64	-.0116	-3.51	8.53	820
3	1/55 - 12/74	4	90.0	8.62	8.39	-.0439	-3.52	9.74	820
3	1/55 - 12/74	5	90.0	11.05	10.20	-.0475	-3.60	11.04	820
3	1/55 - 12/74	6	90.0	13.19	11.69	-.0224	-3.81	12.21	820
3	1/55 - 12/74	7	90.0	15.20	13.05	-.1353	-4.11	13.73	820
3	1/55 - 12/74	8	90.0	17.17	14.48	-.1732	-4.19	15.17	820
3	1/55 - 12/74	9	90.0	19.07	15.33	-.2127	-4.55	15.56	820
3	1/55 - 12/74	10	90.0	21.43	15.64	-.2276	-4.65	17.35	820
3	1/55 - 12/74	11	90.0	23.72	15.07	-.2201	-4.44	15.60	820
3	1/55 - 12/74	12	90.0	25.02	13.84	-.1946	-3.55	15.06	820
3	1/55 - 12/74	13	90.0	27.75	11.79	-.1699	-2.74	12.93	820
3	1/55 - 12/74	14	90.0	29.32	10.34	-.2153	-1.90	10.95	820
3	1/55 - 12/74	15	90.0	29.81	8.63	-.1633	-1.51	8.92	820
3	1/55 - 12/74	16	90.0	18.03	7.83	-.1355	-1.18	7.62	820
3	1/55 - 12/74	17	90.0	15.26	7.23	-.0852	-1.36	6.58	820
3	1/55 - 12/74	18	90.0	11.78	6.40	-.0414	-1.20	5.01	820
3	1/55 - 12/74	19	90.0	8.65	6.09	-.0253	-1.26	4.16	820
3	1/55 - 12/74	20	90.0	6.44	6.24	-.0051	-1.28	3.83	820
3	1/55 - 12/74	21	90.0	4.60	5.72	-.0039	-1.21	3.48	820
3	1/55 - 12/74	22	90.0	3.12	7.07	-.0102	-1.08	3.08	820
3	1/55 - 12/74	23	90.0	2.90	7.84	-.1122	-.65	3.24	820
3	1/55 - 12/74	24	90.0	3.30	8.74	-.0927	-.57	3.29	820
3	1/55 - 12/74	25	90.0	3.68	9.66	-.2229	-.30	3.29	820
3	1/55 - 12/74	26	90.0	4.43	10.35	-.3359	-.13	3.27	820
3	1/55 - 12/74	27	90.0	5.63	11.39	-.4227	-.04	3.57	820

ALTIMETER (MM)									
BIAVARIATE NORMAL STATISTICS OF X, Y, Z									
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR X AND Y									
	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N		MEAN Z	S.D. Z
	2.22	2.80	-.5303	-2.33	3.24	500		-2.22	
Y	MEAN Y	S.D. Y	P (Y, Z)	MEAN Z	S.D. Z				
2	2.21	2.73	-.5294	-2.32	3.25			-2.21	
3	2.22	2.73	-.5293	-2.31	3.25			-2.22	
4	2.23	2.72	-.5293	-2.30	3.25			-2.23	
5	2.24	2.72	-.5292	-2.29	3.25			-2.24	
6	2.25	2.71	-.5292	-2.28	3.25			-2.25	
7	2.26	2.71	-.5291	-2.27	3.25			-2.26	
8	2.27	2.70	-.5291	-2.26	3.25			-2.27	
9	2.28	2.70	-.5290	-2.25	3.25			-2.28	
10	2.29	2.69	-.5290	-2.24	3.25			-2.29	
11	2.30	2.69	-.5289	-2.23	3.25			-2.30	
12	2.31	2.68	-.5289	-2.22	3.25			-2.31	
13	2.32	2.68	-.5288	-2.21	3.25			-2.32	
14	2.33	2.67	-.5288	-2.20	3.25			-2.33	
15	2.34	2.67	-.5287	-2.19	3.25			-2.34	
16	2.35	2.66	-.5287	-2.18	3.25			-2.35	
17	2.36	2.66	-.5286	-2.17	3.25			-2.36	
18	2.37	2.65	-.5286	-2.16	3.25			-2.37	
19	2.38	2.65	-.5285	-2.15	3.25			-2.38	
20	2.39	2.64	-.5285	-2.14	3.25			-2.39	
21	2.40	2.64	-.5284	-2.13	3.25			-2.40	
22	2.41	2.63	-.5284	-2.12	3.25			-2.41	
23	2.42	2.63	-.5283	-2.11	3.25			-2.42	
24	2.43	2.62	-.5283	-2.10	3.25			-2.43	
25	2.44	2.62	-.5282	-2.09	3.25			-2.44	
26	2.45	2.61	-.5282	-2.08	3.25			-2.45	
27	2.46	2.61	-.5281	-2.07	3.25			-2.46	
28	2.47	2.60	-.5281	-2.06	3.25			-2.47	
29	2.48	2.60	-.5280	-2.05	3.25			-2.48	
30	2.49	2.59	-.5280	-2.04	3.25			-2.49	
31	2.50	2.59	-.5279	-2.03	3.25			-2.50	
32	2.51	2.58	-.5279	-2.02	3.25			-2.51	
33	2.52	2.58	-.5278	-2.01	3.25			-2.52	
34	2.53	2.57	-.5278	-2.00	3.25			-2.53	
35	2.54	2.57	-.5277	-1.99	3.25			-2.54	
36	2.55	2.56	-.5277	-1.98	3.25			-2.55	
37	2.56	2.56	-.5276	-1.97	3.25			-2.56	
38	2.57	2.55	-.5276	-1.96	3.25			-2.57	
39	2.58	2.55	-.5275	-1.95	3.25			-2.58	
40	2.59	2.54	-.5275	-1.94	3.25			-2.59	
41	2.60	2.54	-.5274	-1.93	3.25			-2.60	
42	2.61	2.53	-.5274	-1.92	3.25			-2.61	

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (9221N) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N
12	2.77	5.00	.5832	-3.68	7.08	-.1282	-3.68	7.08	600
24	2.73	4.98	.5823	-3.70	7.04				
36	2.67	4.94	.5834	-3.57	7.02				
48	2.62	4.94	.5825	-3.56	6.99				
60	2.55	4.90	.5813	-3.49	6.99				
72	2.54	4.94	.5800	-3.40	6.96				

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
GIVEN X	2.77	3.87	-.0134	-3.28	4.88
GIVEN Y	2.73	4.38	-.0551	-3.38	8.20
	2.74	4.72	-.1103	-3.52	6.81
	2.78	4.87	-.1361	-3.60	6.97
	2.81	4.95	-.1294	-3.62	7.03
	2.83	4.97	-.1320	-3.62	7.01

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N
12	5.54	6.59	.8787	-3.94	8.60	-.0255	-3.94	8.60	600
24	5.48	6.51	.8461	-3.98	8.58				
36	5.42	6.47	.8445	-3.91	8.46				
48	5.34	6.47	.8303	-3.78	8.43				
60	5.26	6.51	.8527	-3.51	8.35				
72	5.21	6.47	.8161	-3.48	8.29				

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
GIVEN X	5.51	4.59	-.0805	-3.35	5.73
GIVEN Y	5.45	5.52	-.0012	-3.54	7.37
	5.47	6.04	-.0291	-3.71	8.08
	5.54	6.35	-.0455	-3.83	8.35
	5.58	6.50	-.0337	-3.86	8.45
	5.60	6.55	-.0275	-3.84	8.45

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (1922-41) - VALDREBERG
MONTH - OF RECORD - APRIL
PERIOD OF RECORD - 1955 - 12/74
UPRA ANGLE - 50.0

ALTITUDE (M)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP
DT	8.55	8.47	.0371	-4.12	10.35	600					
12	8.53	7.13		7.31	.2332		8.42	5.72	-.0219	-3.35	6.70
24	8.47	4.23		4.37	.2332		8.37	7.12	-.0222	-3.63	8.21
36	8.40	2.33		2.73	.2332		8.33	7.82	-.0240	-3.85	9.61
48	8.29	1.64		1.84	.2332		8.47	8.21	-.0103	-3.97	9.92
60	8.18	.972		.957	.2332		8.51	8.29	.0234	-3.93	10.11
72	8.10	.322		.287	.2332		8.54	8.45	.0375	-3.89	10.16

ALTITUDE (M)

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP
DT	11.34	10.30	.1063	-4.03	11.90	600					
12	11.30	7.13		7.23	.2332		11.27	7.05	.0212	-3.21	7.94
24	11.21	4.23		4.43	.2332		11.22	8.73	.0221	-3.49	10.16
36	11.13	2.33		2.82	.2332		11.23	9.47	.0373	-3.73	11.03
48	10.98	1.64		1.93	.2332		11.29	9.95	.0725	-3.83	11.44
60	10.84	.972		.957	.2332		11.31	10.15	.0932	-3.87	11.63
72	10.77	.322		.287	.2332		11.34	10.26	.1014	-3.87	11.68

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN X	S.D. X	R (XP, YP)	MEAN Y	S.D. Y	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	13.91	11.96	.1403	-4.02	13.48	600	13.85	11.95	.7289	-4.01	13.40	.7167	13.88	11.95	.0654	-3.27	9.12	13.94	-2.95	13.88	8.10	.0311	-3.27	9.12
24							13.72	11.92	.5079	-4.04	13.36	.4344	13.85	11.92	-.1088	-3.52	11.59			13.85	10.07	.0650	-3.52	11.59
36							13.51	11.91	.3511	-3.97	13.34	.2998	13.87	11.91	-.1235	-3.72	12.48			13.87	10.59	.0678	-3.72	12.48
48							13.43	11.83	.2165	-3.77	13.22	.1822	13.92	11.83	-.1116	-3.80	12.93			13.92	11.54	.1044	-3.80	12.93
60							13.28	11.83	.1150	-3.60	13.11	.0952	13.92	11.83	-.1042	-3.84	13.15			13.92	11.79	.1294	-3.84	13.15
72							13.20	11.82	.0810	-3.42	12.98	.1070	13.95	11.82	-.0420	-3.65	13.22			13.95	11.90	.1339	-3.65	13.22

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN X	S.D. X	R (XP, YP)	MEAN Y	S.D. Y	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	15.25	13.19	.1773	-3.94	15.00	600	15.16	13.18	.7595	-3.95	14.90	.7126	15.36	13.18	.0529	-3.06	10.28	15.42	-2.74	15.36	8.51	.0573	-3.06	10.28
24							15.03	13.09	.5493	-3.97	14.86	.4314	15.31	13.09	-.0857	-3.34	13.07			15.31	10.81	.1010	-3.34	13.07
36							15.81	13.09	.3961	-3.90	14.87	.2425	15.34	13.09	-.0847	-3.53	14.47			15.34	11.59	.1104	-3.53	14.47
48							15.59	13.03	.2444	-3.67	14.73	.1911	15.37	13.03	-.0794	-3.63	14.57			15.37	12.68	.1445	-3.63	14.57
60							15.44	13.03	.1481	-3.52	14.61	.1384	15.34	13.03	-.0829	-3.68	14.68			15.34	12.96	.1663	-3.68	14.68
72							15.32	13.02	.1001	-3.31	14.49	.1266	15.35	13.02	-.0208	-3.73	14.77			15.35	13.12	.1708	-3.73	14.77

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (193214) - VANZENBERG
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	24	18.19	14.48	.2183	-4.05	16.28	600	18.47	18.47	-2.86							
12	24	18.08	14.40	.7647	-4.08	16.17		18.43	9.30	.0933	-3.17	11.54					
24	36	17.89	14.31	.5710	-4.07	16.14		18.40	11.73	.1358	-3.45	14.37					
36	48	17.67	14.31	.4058	-4.02	16.16		18.40	13.09	.1565	-3.62	15.41					
48	60	17.48	14.28	.2615	-3.78	16.08		18.38	13.85	.1879	-3.73	15.83					
60	72	17.31	14.23	.1650	-3.61	15.98		18.34	14.19	.2086	-3.78	15.98					
72		17.19	14.27	.1270	-3.35	15.83		18.35	14.35	.2096	-3.82	16.04					

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	24	20.00	15.47	.2739	-4.08	17.08	600	20.21	20.21	-2.81							
12	24	19.83	15.31	.7663	-4.10	16.98		20.24	9.32	.1628	-3.16	12.08					
24	36	19.64	15.19	.5738	-4.08	16.94		20.21	12.58	.2004	-3.48	15.14					
36	48	19.41	15.14	.4141	-4.02	16.99		20.21	13.92	.2218	-3.65	16.20					
48	60	19.16	15.10	.2643	-3.78	16.87		20.21	14.79	.2490	-3.77	16.63					
60	72	19.03	15.10	.1622	-3.62	16.77		20.15	15.18	.2684	-3.82	16.78					
72		18.89	15.09	.1139	-3.34	16.67		20.15	15.36	.2677	-3.87	16.84					

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VARGENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 50.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	21.53	15.47	7.822	17.27	7.44	2.871	3047	1817	9.74	.1834	22.02	12.05	21.94	-2.64	-3.26	12.05
24	21.73	15.33	5.744	17.24	4.925	2.886	2803	.0537	12.70	.2411	22.01	15.24			-3.42	15.24
36	21.20	15.23	4.111	17.21	2.832	2.929	2498	-.0162	14.11	.2518	22.04	16.48			-3.65	16.48
48	21.98	15.26	2.634	17.13	1.820	3.036	1825	-.0427	14.99	.2733	22.04	17.00			-3.79	17.00
60	20.79	15.24	1.457	17.04	1.454	3.102	1481	-.0453	15.44	.2653	22.00	17.13			-3.84	17.13
72	20.84	15.24	.6946	16.94	.1098	3.161	1234	-.0094	15.59	.2638	21.99	17.24			-3.69	17.24

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	21.53	15.47	7.822	17.27	7.44	2.871	3047	1817	9.74	.1834	22.02	12.05	21.94	-2.64	-3.26	12.05
24	21.73	15.33	5.744	17.24	4.925	2.886	2803	.0537	12.70	.2411	22.01	15.24			-3.42	15.24
36	21.20	15.23	4.111	17.21	2.832	2.929	2498	-.0162	14.11	.2518	22.04	16.48			-3.65	16.48
48	21.98	15.26	2.634	17.13	1.820	3.036	1825	-.0427	14.99	.2733	22.04	17.00			-3.79	17.00
60	20.79	15.24	1.457	17.04	1.454	3.102	1481	-.0453	15.44	.2653	22.00	17.13			-3.84	17.13
72	20.84	15.24	.6946	16.94	.1098	3.161	1234	-.0094	15.59	.2638	21.99	17.24			-3.69	17.24

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (13214) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	R (XP, YP)	MEAN YP	S.D. YP
12	24	23.94	13.64	.2944	-2.36	15.48	600	24.08	8.24	.1255	-1.38	9.80	24.08	23.87	.1255	-1.38	9.80
12	24	23.72	13.44	.7966	-2.32	15.39		24.08	8.24	.1255	-1.38	9.80	24.08	23.87	.1255	-1.38	9.80
24	36	23.51	13.31	.6008	-2.20	15.30		24.13	10.69	.2176	-1.74	13.14	24.13	23.87	.2176	-1.74	13.14
36	48	23.29	13.28	.4422	-2.04	15.32		24.16	12.20	.2357	-1.98	14.48	24.16	23.87	.2357	-1.98	14.48
48	60	23.08	13.20	.2850	-1.88	15.27		24.13	13.02	.2523	-2.12	15.05	24.13	23.87	.2523	-2.12	15.05
60	72	22.93	13.14	.1534	-1.69	15.18		24.07	13.45	.2531	-2.21	15.29	24.07	23.87	.2531	-2.21	15.29
72		22.81	13.12	.0903	-1.50	15.07		24.04	13.57	.2510	-2.23	15.37	24.04	23.87	.2510	-2.23	15.37

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	R (XP, YP)	MEAN YP	S.D. YP
12	24	23.32	11.20	.2311	-1.02	12.84	600	23.39	6.81	.1320	-0.00	7.49	23.39	23.21	.1320	-0.00	7.49
12	24	23.14	10.97	.7934	-1.02	12.78		23.39	6.81	.1320	-0.00	7.49	23.39	23.21	.1320	-0.00	7.49
24	36	22.96	10.94	.6032	-0.95	12.72		23.45	8.93	.2073	-0.33	10.50	23.45	23.21	.2073	-0.33	10.50
36	48	22.78	10.89	.4680	-0.84	12.68		23.48	9.87	.2221	-0.58	11.82	23.48	23.21	.2221	-0.58	11.82
48	60	22.55	10.83	.3148	-0.70	12.61		23.48	10.59	.2269	-0.74	12.40	23.48	23.21	.2269	-0.74	12.40
60	72	22.40	10.79	.1801	-0.50	12.56		23.44	10.99	.2346	-0.86	12.68	23.44	23.21	.2346	-0.86	12.68
72		22.26	10.72	.0996	-0.29	12.47		23.41	11.13	.2332	-0.94	12.78	23.41	23.21	.2332	-0.94	12.78

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

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ALTITUDE (KM) - 14

1171705 (104) - 15

WITNESSES (109) - 15

112

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KFT) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	16.28	6.86	.7294	.87	7.72	.8452	.81	7.79	500	16.31	4.80	.1607	1.62	4.18
24	16.19	6.78	.6113	.93	7.65	.6652				16.34	5.52	.1087	1.41	5.81
36	16.06	6.65	.4792	1.00	7.60	.4905				16.39	6.11	.0529	1.22	6.79
48	15.96	6.64	.4015	1.08	7.56	.3473				16.39	6.35	-.0022	1.08	7.31
60	15.87	6.59	.2958	1.18	7.49	.2573				16.40	6.62	-.0391	.98	7.53
72	15.82	6.58	.2133	1.31	7.41	.1759				16.40	6.77	-.0593	.90	7.67

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	GIVEN X	GIVEN Y
	16.19	1.82

ALTITUDE (KFT) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	13.15	5.95	.6841	.90	6.54	.7928	.82	6.60	600	13.14	4.44	-.0127	1.43	4.01
24	13.10	5.86	.6103	.93	6.49	.6599				13.14	4.82	.0785	1.31	4.94
36	13.02	5.78	.4634	.99	6.45	.4983				13.19	5.39	.0929	1.17	5.71
48	12.92	5.72	.3688	1.05	6.38	.3887				13.21	5.64	.1135	1.06	6.13
60	12.81	5.65	.2435	1.16	6.30	.2731				13.23	5.88	.1246	.97	6.34
72	12.77	5.67	.1777	1.26	6.18	.1823				13.22	5.95	.1327	.90	6.49

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	GIVEN X	GIVEN Y
	13.04	1.67

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION 192214 - VALZENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	9.32	5.34	.6453	.99	5.12	.7239	.93	5.16	600	9.34	4.15	.1231	1.41	3.22
24	9.92	5.30	.5737	1.04	5.07	.6851	.85	5.13		9.95	4.45	.0798	1.32	3.74
36	9.83	5.27	.4245	.97	5.23	.5447	.84	5.15		9.92	4.74	.1152	1.23	4.32
48	9.82	5.25	.3495	1.11	4.93	.4012	.83	5.16		10.00	5.05	.1330	1.14	4.72
60	9.76	5.24	.3244	1.13	4.91	.3264	.82	5.16		10.01	5.13	.1342	1.06	4.91
72	9.67	5.20	.2271	1.26	4.62	.2357	.81	5.16		10.02	5.21	.1464	1.01	4.93

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN X	S.D. X	R (X,XP)	MEAN Y	S.D. Y	R (X,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	7.01	4.74	.0352	.76	4.13	.609	6.97	3.40	.0547	1.17	2.76
24							6.95	3.55	.0457	1.09	3.13
36							6.93	3.96	.0422	1.02	3.49
48							7.00	4.17	.0727	.96	3.73
60							7.00	4.37	.0582	.93	3.83
72							7.00	4.45	.1105	.86	3.92

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION 193214 - VANZENBERG
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (M) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN X	S.D. X	R (XP, YP)	MEAN Y	S.D. Y	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	4.34	4.44	.0413	.37	3.43	600	4.56	4.56	.87	4.56	4.56	.87	4.56	4.56	.87	4.56	4.56	.87	4.56	4.56	.87	4.56	4.56
24	4.49	4.41	.6397	.43	3.38	600	4.57	4.41	.6397	4.57	4.41	.6397	4.57	4.41	.6397	4.57	4.41	.6397	4.57	4.41	.6397	4.57	4.41
36	4.45	4.42	.6280	.46	3.35	600	4.57	4.42	.6280	4.57	4.42	.6280	4.57	4.42	.6280	4.57	4.42	.6280	4.57	4.42	.6280	4.57	4.42
48	4.43	4.40	.5467	.47	3.34	600	4.57	4.40	.5467	4.57	4.40	.5467	4.57	4.40	.5467	4.57	4.40	.5467	4.57	4.40	.5467	4.57	4.40
60	4.37	4.40	.4848	.49	3.31	600	4.57	4.40	.4848	4.57	4.40	.4848	4.57	4.40	.4848	4.57	4.40	.4848	4.57	4.40	.4848	4.57	4.40
72	4.38	4.42	.3790	.51	3.27	600	4.56	4.42	.3790	4.56	4.42	.3790	4.56	4.42	.3790	4.56	4.42	.3790	4.56	4.42	.3790	4.56	4.42
			.3231	.58	3.23	600	4.56	4.42	.3231	4.56	4.42	.3231	4.56	4.42	.3231	4.56	4.42	.3231	4.56	4.42	.3231	4.56	4.42

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
4.56	.87	.87	4.56	4.56	.87	4.56	4.56
			4.56	4.56		4.56	4.56
			4.57	4.41		4.57	4.41
			4.57	4.42		4.57	4.42
			4.57	4.40		4.57	4.40
			4.57	4.40		4.57	4.40
			4.56	4.42		4.56	4.42

ALTITUDE (M) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN X	S.D. X	R (XP, YP)	MEAN Y	S.D. Y	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.85	4.48	.1350	.29	3.14	600	3.08	3.08	.82	3.08	3.08	.82	3.08	3.08	.82	3.08	3.08	.82	3.08	3.08	.82	3.08	3.08
24							3.09	3.47	.0116	3.09	3.47	.0116	3.09	3.47	.0116	3.09	3.47	.0116	3.09	3.47	.0116	3.09	3.47
36							3.10	3.43	.0256	3.10	3.43	.0256	3.10	3.43	.0256	3.10	3.43	.0256	3.10	3.43	.0256	3.10	3.43
48							3.11	3.81	.0608	3.11	3.81	.0608	3.11	3.81	.0608	3.11	3.81	.0608	3.11	3.81	.0608	3.11	3.81
60							3.11	3.86	.0901	3.11	3.86	.0901	3.11	3.86	.0901	3.11	3.86	.0901	3.11	3.86	.0901	3.11	3.86
72							3.10	4.06	.1167	3.10	4.06	.1167	3.10	4.06	.1167	3.10	4.06	.1167	3.10	4.06	.1167	3.10	4.06
							3.10	4.16	.1424	3.10	4.16	.1424	3.10	4.16	.1424	3.10	4.16	.1424	3.10	4.16	.1424	3.10	4.16

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
3.08	.82	.82	3.08	3.08	.82	3.08	3.08
			3.09	3.47		3.09	3.47
			3.10	3.43		3.10	3.43
			3.11	3.81		3.11	3.81
			3.11	3.86		3.11	3.86
			3.11	4.06		3.11	4.06
			3.10	4.16		3.10	4.16

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	1.69	4.58	.1862	.04	2.82	.31			600	1.85	3.29	.0402	.19	2.34
36	48	1.51	4.45	.1998	.05	2.71	.2453	.08	.1998	.1871	1.87	3.48	.0156	.17	2.49
60	72	1.47	4.45	.1998	.05	2.68	.1330	.07	.1998	.1904	1.90	3.69	.0617	.15	2.62
											1.89	3.81	.0980	.13	2.71
											1.90	3.96	.1479	.10	2.79
											1.90	4.13	.1646	.09	2.80

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	1.25	4.82	.2015	.09	2.94	.27			600	1.35	3.22	.0094	.18	2.28
36	48	1.17	4.77	.2303	.07	2.50	.2303	.07	.2303	.2149	1.37	3.57	.0086	.17	2.32
60	72	1.09	4.71	.2303	.06	2.49	.2183	.06	.2303	.2010	1.39	3.69	.0651	.15	2.43
											1.41	3.84	.0910	.13	2.47
											1.42	4.08	.1182	.11	2.49
											1.43	4.28	.1557	.12	2.52

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.63	5.05	.7595	-.00	2.58		1.63	5.05	.7595	-.00	2.58		.2233	.2011	1.57	3.27	.0182	.07	2.23
24	1.61	5.02	.7245	-.04	2.59		1.61	5.02	.7245	-.04	2.59		.2372	.3052	1.88	3.49	-.0560	.09	2.31
36	1.56	4.99	.6575	-.07	2.57		1.56	4.99	.6575	-.07	2.57		.2507	.2833	1.90	3.82	.0143	.08	2.44
48	1.49	4.96	.6217	-.10	2.57		1.49	4.96	.6217	-.10	2.57		.2456	.2725	1.91	3.98	.0505	.07	2.48
60	1.43	4.93	.5704	-.12	2.57		1.43	4.93	.5704	-.12	2.57		.2462	.2248	1.94	4.18	.0981	.06	2.51
72	1.35	4.89	.4988	-.14	2.56		1.35	4.89	.4988	-.14	2.56		.2402	.1800	1.95	4.41	.1384	.04	2.52

ALTITUDE (KM) - 25

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.45	5.65	.7507	-.10	2.90		2.45	5.65	.7507	-.10	2.90		.1593	.2000	2.54	3.72	.0017	-.07	2.49
24	2.37	5.65	.7188	-.10	2.89		2.37	5.65	.7188	-.10	2.89		.2085	.2126	2.60	3.91	.0050	-.07	2.62
36	2.27	5.62	.6765	-.11	2.87		2.27	5.62	.6765	-.11	2.87		.2214	.1883	2.65	4.14	.0579	-.07	2.78
48	2.20	5.61	.6347	-.13	2.86		2.20	5.61	.6347	-.13	2.86		.2250	.1688	2.70	4.36	.0959	-.07	2.85
60	2.12	5.59	.6058	-.15	2.87		2.12	5.59	.6058	-.15	2.87		.2209	.1420	2.74	4.49	.1312	-.08	2.87
72	2.03	5.54	.5366	-.18	2.87		2.03	5.54	.5366	-.18	2.87		.2268	.0950	2.77	4.77	.1619	-.08	2.89

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y					
	3.14	6.05	.2909	-.13	3.02	600		3.03	-.15					
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	3.07	6.04	.8360	-.17	3.02	.5494	.2857	.2535	.3020	3.11	3.30	.1020	-.12	2.50
24	2.96	6.03	.7969	-.17	3.01	.4564	.2980	.2552	.2652	3.19	3.65	.1095	-.12	2.65
36	2.88	6.01	.7447	-.16	3.01	.2979	.3085	.2252	.2675	3.25	4.03	.1807	-.12	2.85
48	2.79	5.98	.7224	-.17	3.02	.1955	.3071	.2015	.2394	3.31	4.18	.2129	-.11	2.92
60	2.69	5.92	.6621	-.20	3.04	.0387	.3050	.1486	.2612	3.36	4.52	.2612	-.11	2.98
72	2.58	5.84	.6212	-.24	3.04	.0316	.3193	.1289	.2074	3.43	4.74	.2714	-.10	2.99

ALTITUDE (KM) - 27

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		GIVEN X		GIVEN Y	
	4.38	6.58	.2794	.00	3.32	600		4.31		-.10	
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	4.31	6.56	.8235	-.05	3.35	.5643	.2766	3.68	-.0268	-.02	2.70
24	4.19	6.51	.7755	-.08	3.36	.4674	.2822	4.14	.0351	.00	2.87
36	4.10	6.50	.7308	-.07	3.38	.2999	.2865	4.46	.0928	.02	3.10
48	3.99	6.45	.7058	-.10	3.42	.2349	.2867	4.66	.1371	.04	3.16
60	3.91	6.39	.6614	-.13	3.43	.1570	.2867	4.92	.1867	.04	3.23
72	3.80	6.29	.6081	-.14	3.43	.0933	.2967	5.21	.2024	.05	3.25

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
4	1/65 - 12/74	0	90.0	2.22	2.80	-.6305	-2.38	3.24	600
4	1/65 - 12/74	1	90.0	1.31	3.99	-.0877	-4.01	5.68	600
4	1/65 - 12/74	2	90.0	2.83	4.97	-.1282	-3.69	7.08	600
4	1/65 - 12/74	3	90.0	5.61	6.56	-.0255	-3.94	8.60	600
4	1/65 - 12/74	4	90.0	8.55	8.47	.0371	-4.12	10.35	600
4	1/65 - 12/74	5	90.0	11.34	10.30	.1063	-4.03	11.50	600
4	1/65 - 12/74	6	90.0	13.91	11.98	.1403	-4.02	13.46	600
4	1/65 - 12/74	7	90.0	16.25	13.19	.1773	-3.94	15.00	600
4	1/65 - 12/74	8	90.0	18.19	14.48	.2183	-4.05	16.28	600
4	1/65 - 12/74	9	90.0	20.00	15.47	.2739	-4.08	17.08	600
4	1/65 - 12/74	10	90.0	21.67	15.68	.2879	-4.08	17.42	600
4	1/65 - 12/74	11	90.0	23.20	15.23	.2802	-3.53	16.82	600
4	1/65 - 12/74	12	90.0	23.94	13.64	.2544	-2.36	15.49	600
4	1/65 - 12/74	13	90.0	23.32	11.20	.2311	-1.02	12.84	600
4	1/65 - 12/74	14	90.0	21.55	9.14	.2090	.25	10.85	600
4	1/65 - 12/74	15	90.0	19.33	8.00	.2190	.73	9.21	600
4	1/65 - 12/74	16	90.0	16.36	6.98	.1934	.81	7.79	600
4	1/65 - 12/74	17	90.0	13.21	6.09	.1087	.82	6.60	600
4	1/65 - 12/74	18	90.0	10.04	5.43	.0843	.93	5.16	600
4	1/65 - 12/74	19	90.0	7.01	4.74	.0352	.76	4.13	600
4	1/65 - 12/74	20	90.0	4.54	4.44	.0413	.37	3.43	600
4	1/65 - 12/74	21	90.0	2.95	4.48	.1350	.29	3.14	600
4	1/65 - 12/74	22	90.0	1.69	4.58	.1862	.04	2.82	600
4	1/65 - 12/74	23	90.0	1.25	4.82	.2015	.09	2.54	600
4	1/65 - 12/74	24	90.0	1.68	5.09	.2060	.01	2.58	600
4	1/65 - 12/74	25	90.0	2.50	5.66	.1852	-.10	2.91	600
4	1/65 - 12/74	26	90.0	3.14	6.05	.2909	-.13	3.02	600
4	1/65 - 12/74	27	90.0	4.38	6.58	.2784	.00	3.32	600

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (19214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (NM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	P (X, Y)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	2.32	2.39	-1.6003	-2.15	2.59	620								
24														
36														
48														
60														
72														

ALTITUDE (NM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	P (X, Y)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	1.02	3.43	-1.1995	-3.33	4.41	620								
24														
36														
48														
60														
72														

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y			
	1.02	4.10	-.3577	-3.13	5.43	620	.95	-2.96			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	1.07	4.11	.6212	-3.12	5.43	.7132	.93	3.08	-.1227	-3.02	3.80
HR	1.08	4.13	.4829	-3.12	5.43	.5509	.94	3.35	-.1872	-3.05	4.51
12	1.05	4.13	.2790	-3.12	5.42	.3486	.97	3.68	-.2716	-3.08	5.05
24	1.00	4.12	.2022	-3.16	5.39	.2366	.96	3.76	-.3035	-3.08	5.26
36	1.00	4.13	.0558	-3.15	5.37	.1142	.98	3.92	-.3391	-3.10	5.38
48	.99	4.14	.0543	-3.19	5.36	.0857	.98	3.99	-.3477	-3.10	5.41
60	.98										
72											

ALTITUDE (KM) - 3

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y			
	2.72	5.20	-.4074	-2.57	6.53	620	2.74	-2.46			
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	2.76	5.91	.7594	-2.55	6.52	.7741	2.69	3.62	-.1304	-2.50	4.12
HR	2.72	5.92	.5791	-2.53	6.50	.5714	2.71	4.45	-.2266	-2.52	5.34
12	2.68	5.92	.4164	-2.52	6.49	.3571	2.72	4.96	-.3104	-2.53	5.96
24	2.61	5.91	.2989	-2.55	6.46	.2438	2.70	5.26	-.3560	-2.52	6.30
36	2.55	5.91	.1875	-2.56	6.43	.1143	2.70	5.52	-.3991	-2.54	6.48
48	2.55	5.91	.1202	-2.59	6.39	.0403	2.69	5.67	-.4131	-2.56	6.53
60	2.53	5.91									
72											

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

..... ALTITUDE (KM) - 4
 QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP
 CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	4.53	7.36	.8181	-2.16	7.40	.7715	-.3269	-2.20	7.45	620	4.70	-2.20	4.67	3.98	-.0608	-2.22	4.73
24	4.47	7.39	.6396	-2.13	7.36	.5543	-.3275						4.68	5.23	-.1644	-2.22	5.18
36	4.43	7.43	.4875	-2.12	7.33	.3722	-.3296						4.67	5.89	-.2335	-2.21	5.89
48	4.34	7.44	.3584	-2.13	7.30	.2141	-.3320						4.65	6.32	-.2881	-2.19	7.26
60	4.28	7.42	.2632	-2.18	7.26	.0837	-.3274						4.61	6.68	-.3250	-2.13	7.42
72	4.24	7.42	.1948	-2.18	7.20	.0113	-.3163						4.59	6.92	-.3388	-2.19	7.45

..... ALTITUDE (KM) - 5
 QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP
 CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	6.14	8.52	.8126	-1.95	8.01	.7495	-.1776	-2.01	8.09	620	6.45	-2.01	6.42	4.79	.0092	-2.05	5.35
24	6.10	8.54	.6406	-1.90	7.96	.5195	-.1772						6.41	6.20	-.0608	-2.05	6.90
36	6.08	8.54	.5108	-1.89	7.92	.3155	-.1803						6.38	6.85	-.1148	-2.03	7.65
48	6.00	8.56	.3979	-1.91	7.86	.1826	-.1808						6.36	7.36	-.1631	-2.00	7.33
60	5.91	8.55	.2938	-1.99	7.84	.0548	-.1777						6.31	7.77	-.1874	-1.99	8.07
72	5.84	8.54	.2184	-2.03	7.79	.0324	-.1652						6.27	8.00	-.1932	-1.99	8.09

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	7.48	9.94	-.0695	-2.05	9.04	620	7.89	7.89	-2.05	-2.05	-2.05
12	24	7.43	9.63	8.087	-1.99	8.97	8.97	7.83	5.51	.0974	-2.12	5.94
36	48	7.42	9.65	6.183	-1.93	8.93	8.93	7.78	7.25	.0375	-2.11	7.83
48	60	7.31	9.67	5.144	-1.94	8.88	8.88	7.75	7.79	-.0217	-2.07	8.67
60	72	7.20	9.69	4.083	-1.99	8.81	8.81	7.73	8.36	-.0678	-2.03	8.92
72		7.10	9.64	3.011	-2.07	8.76	8.76	7.67	8.80	-.0873	-2.01	9.02
				.2323	-2.16	8.73	8.73	7.63	9.05	-.0926	-2.01	9.02

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	8.73	10.63	-.0016	-2.29	10.32	620	9.23	9.23	-2.33	-2.33	-2.33
12	24	8.73	10.75	8.143	-2.23	10.27	10.27	9.13	6.12	.1045	-2.35	6.93
36	48	8.74	10.75	6.216	-2.17	10.22	10.22	9.06	8.12	.0644	-2.34	9.17
48	60	8.61	10.77	5.162	-2.18	10.15	10.15	9.02	8.77	.0181	-2.29	9.97
60	72	8.47	10.73	4.075	-2.23	10.08	10.08	9.00	9.41	-.0061	-2.25	10.21
72		8.33	10.72	3.022	-2.31	10.02	10.02	8.95	9.66	-.0228	-2.23	10.29
				.2257	-2.42	10.00	10.00	8.91	10.15	-.0264	-2.23	10.29

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	10.06	11.72	.0601	-2.56	11.78	620													10.75	-2.70
12	10.08	11.85	.8124	-2.46	11.72				.0537	.0537	-.0178			10.82	6.78	.1738	-2.73	8.07		
24	10.09	11.87	.6377	-2.40	11.69				.0694	.0694	-.1248			10.54	8.80	.1301	-2.67	10.60		
36	10.06	11.87	.5280	-2.43	11.60				.0645	.0645	-.1783			10.49	9.63	.0767	-2.57	11.33		
48	9.93	11.86	.4276	-2.49	11.53				.0612	.0612	-.1680			10.45	10.37	.0529	-2.52	11.65		
60	9.75	11.82	.3195	-2.58	11.48				.0516	.0516	-.1574			10.41	10.91	.0395	-2.48	11.74		
72	9.55	11.85	.2513	-2.72	11.44				.0489	.0489	-.1568			10.37	11.17	.0357	-2.46	11.73		

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	11.27	12.61	.1322	-2.44	12.78	620													12.23	-2.53
12	11.28	12.74	.8060	-2.35	12.73				.1413	.1413	.0648			12.05	7.44	.2137	-2.58	9.07		
24	11.26	12.76	.6334	-2.26	12.71				.1437	.1437	-.0538			11.94	9.58	.1883	-2.52	11.62		
36	11.22	12.76	.5407	-2.29	12.60				.1393	.1393	-.1115			11.89	10.34	.1457	-2.42	12.38		
48	11.09	12.75	.4504	-2.36	12.53				.1376	.1376	-.1152			11.84	11.03	.1191	-2.36	12.63		
60	10.85	12.72	.3490	-2.46	12.52				.1305	.1305	-.1174			11.79	11.63	.1103	-2.32	12.72		
72	10.66	12.77	.2872	-2.63	12.52				.1264	.1264	-.1186			11.73	11.92	.1066	-2.30	12.72		

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	12.72	13.43	.1951	-2.30	13.58	620	13.58	7.91	.2386	-2.40	9.48
36	48	12.73	13.58	.8076	-2.21	13.54		13.58	10.35	.2386	-2.35	12.23
60	72	12.67	13.61	.5291	-2.13	13.52		13.45	11.18	.1966	-2.24	13.10
		12.51	13.59	.4738	-2.17	13.42		13.35	11.85	.1745	-2.17	13.38
		12.29	13.60	.3474	-2.28	13.41		13.29	12.42	.1651	-2.11	13.47
		12.06	13.68	.2933	-2.46	13.49		13.25	12.73	.1686	-2.12	13.49

ALTITUDE (KM) - 11

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	14.09	14.04	.2578	-2.07	14.05	620	14.99	8.28	.2624	-2.20	9.48
36	48	14.06	14.10	.8071	-1.97	14.00		14.90	10.77	.2657	-2.12	12.44
60	72	14.00	14.12	.5300	-1.88	13.97		14.84	11.70	.2284	-1.97	13.39
		13.93	14.13	.5310	-1.91	13.90		14.79	12.46	.2257	-1.83	13.74
		13.77	14.10	.4249	-1.93	13.87		14.71	13.08	.2246	-1.83	13.88
		13.56	14.11	.3331	-2.03	13.91		14.67	13.33	.2268	-1.61	13.90
		13.33	14.14	.2901	-2.20	14.02						

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.3

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	15.23	13.23	.8200	-1.15	12.76	.7506	-1.25	12.82	620	16.05	7.55	.2375	-1.37	8.47
24	14.93	13.20	.6510	-1.08	12.71	.4850				15.97	9.95	.2827	-1.27	11.17
36	14.82	13.20	.5254	-1.12	12.62	.2927				15.91	11.06	.2674	-1.13	12.15
48	14.67	13.22	.4232	-1.13	12.63	.1430				15.85	11.75	.2554	-1.04	12.53
60	14.47	13.25	.3355	-1.21	12.65	.0559				15.76	12.27	.2499	-.97	12.63
72	14.28	13.28	.2729	-1.34	12.73	-.0075				15.67	12.60	.2574	-.98	12.69

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	15.31	11.17		.2797	10.61	.00			620	16.31	5.93	.2525	-.12	6.61
24	15.13	11.14	.8487	.11	10.52	.7815				16.25	8.09	.2816	-.04	9.04
36	15.02	11.14	.6823	.18	10.48	.5773				16.18	9.36	.2692	.09	10.03
48	14.83	11.18	.5234	.16	10.45	.3337				16.09	10.08	.2628	.15	10.41
60	14.75	11.23	.3387	.05	10.47	.1447				15.99	10.53	.2594	.18	10.52
72	14.62	11.27	.2228	-.05	10.52	-.0259				15.74	10.63	.2643	.17	10.55

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	11.17	5.80	.1725	1.61	5.69	620	11.69	3.45	.0467	1.53	3.55								
24																			
36																			
48																			
60																			
72																			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
11.67	1.48

ALTITUDE (KM) - 17

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	8.59	4.69	.1054	1.43	4.37	620	8.96	3.16	-.0076	1.37	2.98								
24																			
36																			
48																			
60																			
72																			

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
8.93	1.33

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (193214) - VANDENBERG
MONTH OF RECORD - MAY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	5.46	3.92	.6956	1.06	3.44	.1260	5.77	2.84	.0953	1.05	2.68	5.77	2.84	.0953	1.05	2.68
24	5.33	3.90	.6194	1.04	3.44	.1349	5.83	3.10	.0863	1.09	2.90	5.83	3.10	.0863	1.09	2.90
36	5.21	3.88	.5043	1.05	3.44	.1389	5.84	3.41	.0846	1.09	3.26	5.84	3.41	.0846	1.09	3.26
48	5.10	3.91	.4099	1.05	3.45	.1392	5.84	3.61	.0893	1.09	3.37	5.84	3.61	.0893	1.09	3.37
60	4.99	3.91	.3001	1.03	3.45	.1375	5.80	3.77	.1174	1.07	3.44	5.80	3.77	.1174	1.07	3.44
72	4.90	3.93	.2217	1.01	3.45	.1350	5.76	3.85	.1209	1.07	3.45	5.76	3.85	.1209	1.07	3.45

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
5.74	1.05

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	2.67	3.62	.0947	.64	2.73	.0880	2.78	2.63	-.0103	.68	2.29	2.78	2.63	-.0103	.68	2.29
24	2.55	3.57	.6963	.62	2.72	.0874	2.85	2.83	.0531	.68	2.37	2.85	2.83	.0531	.68	2.37
36	2.41	3.50	.6154	.62	2.72	.0874	2.88	3.06	.0596	.68	2.61	2.88	3.06	.0596	.68	2.61
48	2.32	3.48	.5330	.61	2.72	.0870	2.90	3.25	.0698	.68	2.70	2.90	3.25	.0698	.68	2.70
60	2.20	3.47	.4404	.58	2.71	.0802	2.87	3.43	.0890	.63	2.73	2.87	3.43	.0890	.63	2.73
72	2.10	3.43	.3200	.55	2.71	.0802	2.88	3.46	.1024	.63	2.72	2.88	3.46	.1024	.63	2.72

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
2.71	.68

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (19314) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
		.22	3.42	.1000	.04	2.31	620						.20	.02
DT	HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	S.D. YP
12		.11	3.37	.6313	.03	2.31	.4047	.0871	.0967	.1356	.27	2.64	.0097	2.11
24		.01	3.36	.6188	.02	2.31	.3794	.0719	.1953	.0333	.34	2.69	-.0234	2.11
36		-.10	3.30	.5426	.02	2.20	.2360	.0640	.1070	.0756	.39	2.67	-.0403	2.24
48		-.20	3.26	.5014	.02	2.30	.0397	.0612	.1428	.0592	.43	2.96	.0315	2.28
60		-.30	3.24	.3995	.02	2.30	.0317	.0570	.0795	.0583	.43	3.13	.0730	2.30
72		-.40	3.21	.3748	-.00	2.29	-.0267	.0558	.0370	.0518	.46	3.17	.0941	2.31

ALTITUDE (KM) - 21

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN Y	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
		-1.40	3.40	.1441	-.36	2.46	620						-1.45	-.45
DT	HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	S.D. YP
12		-1.47	3.34	.6040	-.39	2.44	.3828	.1268	.0817	.1491	-1.39	2.70	.0915	2.26
24		-1.54	3.32	.5795	-.39	2.45	.3155	.1243	.2316	.0175	-1.34	2.79	.0261	2.28
36		-1.63	3.29	.5486	-.35	2.45	.2346	.1212	.1028	.0229	-1.30	2.84	.1042	2.40
48		-1.72	3.26	.4341	-.35	2.44	.0395	.1210	.0827	.0115	-1.26	3.05	.1215	2.45
60		-1.73	3.23	.4322	-.33	2.41	-.0112	.1103	.0418	.0377	-1.24	3.07	.1397	2.45
72		-1.89	3.22	.3457	-.33	2.41	-.0734	.1129	-.0173	.0236	-1.23	3.19	.1593	2.45

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.3

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
	-2.36	3.32	.0733	-0.51	2.22	620										
12	-2.44	3.28	.6593	-.52	2.22		-.52	2.22	.3333	.3333	.0835	-.35	2.46	.0118	-.52	2.10
24	-2.51	3.27	.6065	-.52	2.22		-.52	2.22	.0725	.1319	.0712	-.31	2.64	-.0168	-.51	2.14
36	-2.53	3.23	.5457	-.49	2.22		-.49	2.22	.1590	.0635	.0819	-.27	2.78	.0424	-.52	2.19
48	-2.67	3.19	.4214	-.47	2.22		-.47	2.22	.0137	.0626	.0172	-.25	3.01	.0813	-.51	2.22
60	-2.76	3.15	.3949	-.47	2.22		-.47	2.22	-.0327	.0558	.0153	-.22	3.05	.0864	-.51	2.22
72	-2.83	3.15	.3348	-.46	2.21		-.46	2.21	-.0788	.0491	-.0720	-.22	3.13	.1055	-.53	2.21

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
-2.42	-.55

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
	-2.79	3.65	.1021	-.65	2.28	620										
12	-2.91	3.60	.6624	-.64	2.23		-.64	2.23	.3029	.3029	.1122	-.77	2.68	.0752	-.68	2.12
24	-3.02	3.59	.6152	-.65	2.23		-.65	2.23	.1767	.1143	.0957	-.68	2.88	.0577	-.65	2.24
36	-3.10	3.57	.5597	-.65	2.29		-.65	2.29	.1535	.1150	.0839	-.67	3.02	.1206	-.67	2.25
48	-3.21	3.53	.4813	-.63	2.29		-.63	2.29	-.0254	.1259	.0046	-.65	3.20	.1144	-.65	2.28
60	-3.32	3.52	.4465	-.62	2.28		-.62	2.28	-.0599	.1207	-.0313	-.65	3.27	.1309	-.65	2.28
72	-3.40	3.50	.3959	-.62	2.28		-.62	2.28	-.1081	.1196	-.0318	-.65	3.35	.1254	-.65	2.27

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
-2.65	-.72

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0
 X = UIAT T
 Y = VIAT T
 XP = UIAT T + DT
 YP = VIAT T + DT

ALTITUDE (KM) - 24

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-2.69	4.08	.0703	-.75	2.33	620						-2.67	-.75					
12	-2.80	4.05	.7281	-.73	2.33		-.73	2.33	.0691	-.0136	.1410	2.77	.0820	-2.60	2.77	.0820	-.76	2.22
24	-2.93	4.00	.6996	-.70	2.31		-.70	2.31	.0818	.1101	.0494	2.91	-.0075	-2.51	2.91	-.0075	-.74	2.27
36	-3.01	3.96	.6452	-.68	2.31		-.68	2.31	.0808	-.0007	.0993	3.11	.0858	-2.47	3.11	.0858	-.76	2.31
48	-3.13	3.94	.5975	-.66	2.29		-.66	2.29	.0870	-.0354	.0885	3.27	.1177	-2.41	3.27	.1177	-.75	2.32
60	-3.25	3.93	.5367	-.63	2.28		-.63	2.28	.0821	-.0492	.0693	3.44	.1201	-2.38	3.44	.1201	-.75	2.30
72	-3.35	3.92	.5097	-.64	2.28		-.64	2.28	.0847	-.1000	.0385	3.51	.1418	-2.33	3.51	.1418	-.77	2.31

ALTITUDE (KM) - 25

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-2.60	4.26	.0838	-.68	2.31	620						-2.62	-.71					
12	-2.71	4.22	.7571	-.67	2.30		-.67	2.30	.0763	.0357	.1357	2.77	.0489	-2.54	2.77	.0489	-.70	2.17
24	-2.82	4.21	.7373	-.65	2.30		-.65	2.30	.0831	.0778	.0547	2.88	.0426	-2.45	2.88	.0426	-.69	2.24
36	-2.92	4.18	.6903	-.62	2.30		-.62	2.30	.0867	.0242	.0908	3.08	.0871	-2.39	3.08	.0871	-.70	2.28
48	-3.02	4.17	.6359	-.60	2.30		-.60	2.30	.0916	.0315	.0822	3.29	.1071	-2.34	3.29	.1071	-.68	2.31
60	-3.14	4.15	.5913	-.59	2.28		-.59	2.28	.0918	-.0385	.0711	3.44	.1360	-2.29	3.44	.1360	-.68	2.29
72	-3.22	4.16	.5428	-.57	2.26		-.57	2.26	.0879	-.0493	.0587	3.58	.1547	-2.27	3.58	.1547	-.68	2.29

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-2.45	4.52	.9073	-.55	2.48	.4551	-.59	2.49	620	-2.30	2.75	.0543	-2.44	-.63	-.62	2.22
24	-2.57	4.59	.7743	-.54	2.48	.3512	-.59	2.49	620	-2.20	2.96	-.0056			-.61	2.33
36	-2.68	4.59	.7224	-.54	2.50	.1453	-.59	2.49	620	-2.14	3.23	.0225			-.60	2.46
48	-2.79	4.59	.6626	-.53	2.50	.0496	-.59	2.49	620	-2.08	3.43	.0162			-.59	2.49
60	-2.89	4.58	.5105	-.52	2.47	.1073	-.59	2.49	620	-2.03	3.70	.0649			-.59	2.48
72	-2.99	4.59	.5662	-.49	2.47	.1066	-.59	2.49	620	-2.00	3.83	.0121			-.59	2.47

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HP	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-1.98	5.18	.8459	-.54	2.86	.4439	-.58	2.88	620	-1.71	2.77	.0503	-1.84	-.69	-.65	2.58
24	-2.00	5.18	.8145	-.53	2.87	.2594	-.58	2.88	620	-1.60	3.01	.0352			-.63	2.78
36	-2.12	5.18	.7510	-.51	2.84	.1406	-.58	2.88	620	-1.52	3.37	.0281			-.61	2.86
48	-2.24	5.19	.7243	-.48	2.73	.0722	-.58	2.88	620	-1.45	3.52	.0153			-.59	2.87
60	-2.40	5.20	.5536	-.49	2.73	.1550	-.58	2.88	620	-1.35	3.93	.0137			-.57	2.84
72	-2.54	5.12	.5073	-.43	2.76	.1492	-.58	2.88	620	-1.31	4.12	.0120			-.56	2.85

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
5	1/65 - 12/74	0	90.0	2.32	2.39	-.6009	-2.15	2.59	620
5	1/65 - 12/74	1	90.0	1.02	3.43	-.1995	-3.93	4.41	620
5	1/65 - 12/74	2	90.0	1.02	4.10	-.3577	-3.13	5.43	620
5	1/65 - 12/74	3	90.0	2.72	5.90	-.4074	-2.57	6.53	620
5	1/65 - 12/74	4	90.0	4.54	7.29	-.3220	-2.20	7.45	620
5	1/65 - 12/74	5	90.0	6.17	8.44	-.1763	-2.01	8.09	620
5	1/65 - 12/74	6	90.0	7.48	9.54	-.0695	-2.05	9.04	620
5	1/65 - 12/74	7	90.0	8.73	10.63	-.0013	-2.29	10.32	620
5	1/65 - 12/74	8	90.0	10.06	11.72	.0601	-2.56	11.78	620
5	1/65 - 12/74	9	90.0	11.27	12.61	.1322	-2.44	12.78	620
5	1/65 - 12/74	10	90.0	12.72	13.43	.1951	-2.30	13.58	620
5	1/65 - 12/74	11	90.0	14.09	14.04	.2578	-2.07	14.05	620
5	1/65 - 12/74	12	90.0	15.08	13.20	.2846	-1.82	14.82	620
5	1/65 - 12/74	13	90.0	15.31	11.17	.2797	-1.25	10.61	620
5	1/65 - 12/74	14	90.0	14.75	8.93	.2104	.91	8.59	620
5	1/65 - 12/74	15	90.0	13.22	7.00	.1718	1.45	6.84	620
5	1/65 - 12/74	16	90.0	11.17	5.80	.1725	1.61	5.69	620
5	1/65 - 12/74	17	90.0	8.59	4.89	.1054	1.43	4.37	620
5	1/65 - 12/74	18	90.0	5.57	3.95	.1232	1.05	3.45	620
5	1/65 - 12/74	19	90.0	2.67	3.62	.0947	.64	2.73	620
5	1/65 - 12/74	20	90.0	.22	3.42	.1000	.04	2.31	620
5	1/65 - 12/74	21	90.0	-1.40	3.40	.1441	-.36	2.46	620
5	1/65 - 12/74	22	90.0	-2.36	3.32	.0733	-.51	2.22	620
5	1/65 - 12/74	23	90.0	-2.79	3.65	.1021	-.65	2.28	620
5	1/65 - 12/74	24	90.0	-2.69	4.08	.0703	-.75	2.33	620
5	1/65 - 12/74	25	90.0	-2.60	4.26	.0838	-.68	2.31	620
5	1/65 - 12/74	26	90.0	-2.31	4.67	.0151	-.59	2.49	620
5	1/65 - 12/74	27	90.0	-1.73	5.19	.0242	-.58	2.88	620

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (M) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N
12	2.43	2.31	-4148	-1.89	2.35	.2203	.2203	2.37	600	2.39	2.05	-.5737	-1.87	2.27	2.29
24	2.43	2.30	7078	-1.91	2.34	.4196	.4196	2.37	600	2.49	1.64	-.4202	-1.91	2.09	2.29
36	2.42	2.29	-4830	-1.93	2.31	-.0039	-.0039	2.37	600	2.38	2.01	-.5520	-1.86	2.32	2.29
48	2.42	2.28	6300	-1.92	2.32	.2365	.2365	2.37	600	2.49	1.80	-.5049	-1.91	2.25	2.29
60	2.42	2.28	-5497	-1.92	2.33	-.0744	-.0744	2.37	600	2.38	1.93	-.5265	-1.85	2.29	2.29
72	2.42	2.29	.5723	-1.92	2.33	.1518	.1518	2.37	600	2.49	1.89	-.5332	-1.91	2.29	2.29

ALTITUDE (M) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N
12	.80	3.15	-.2355	-3.51	4.34	600	600	600	600	.86	2.79	.0560	-3.59	3.30	3.66
24	.80	3.15	-.2355	-3.51	4.34	600	600	600	600	.87	2.74	-.2254	-3.53	3.66	3.66
36	.80	3.15	-.2355	-3.51	4.34	600	600	600	600	.81	2.99	-.1727	-3.53	4.19	4.19
48	.80	3.15	-.2355	-3.51	4.34	600	600	600	600	.82	3.06	-.2477	-3.49	4.20	4.20
60	.80	3.15	-.2355	-3.51	4.34	600	600	600	600	.78	3.04	-.2360	-3.50	4.34	4.34
72	.80	3.15	-.2355	-3.51	4.34	600	600	600	600	.81	3.14	-.2490	-3.47	4.25	4.25

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
		.80	4.06	-.4029	-2.59	5.16	600	.80	-2.79				

ALTITUDE (KM) - 3

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		2.41	5.52	-.3349	-1.41	6.16	800	3.37	-1.75				

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (193214) - VANDENBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	3.87	6.84	.8032	-.44	6.93	600	3.87	6.84	.8032	-.44	6.93	4.02	-.95	4.07	3.86	-.0981	-.93	4.57
36	48	3.90	6.62	.8407	-.39	6.95	600	3.90	6.62	.8407	-.39	6.95	4.02	-.95	4.07	3.86	-.0981	-.93	4.57
60	72	3.96	6.53	.8624	-.32	6.97	600	3.96	6.53	.8624	-.32	6.97	4.02	-.95	4.07	3.86	-.0981	-.93	4.57
84	96	3.99	6.48	.8719	-.27	6.97	600	3.99	6.48	.8719	-.27	6.97	4.02	-.95	4.07	3.86	-.0981	-.93	4.57
108	120	4.03	6.44	.8742	-.23	6.94	600	4.03	6.44	.8742	-.23	6.94	4.02	-.95	4.07	3.86	-.0981	-.93	4.57

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 5

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	5.47	7.56	-.2119	-.19	7.75	600	5.47	7.56	-.2119	-.19	7.75	5.73	-.67	5.74	4.58	-.1406	-.62	4.59
36	48	5.45	7.44	-.2008	-.06	7.78	600	5.45	7.44	-.2008	-.06	7.78	5.73	-.67	5.74	4.58	-.1406	-.62	4.59
60	72	5.43	7.41	-.2051	-.04	7.81	600	5.43	7.41	-.2051	-.04	7.81	5.73	-.67	5.74	4.58	-.1406	-.62	4.59
84	96	5.47	7.35	-.2138	-.04	7.80	600	5.47	7.35	-.2138	-.04	7.80	5.73	-.67	5.74	4.58	-.1406	-.62	4.59
108	120	5.49	7.31	-.2271	-.11	7.79	600	5.49	7.31	-.2271	-.11	7.79	5.73	-.67	5.74	4.58	-.1406	-.62	4.59
132	144	5.52	7.28	-.2384	.19	7.79	600	5.52	7.28	-.2384	.19	7.79	5.73	-.67	5.74	4.58	-.1406	-.62	4.59

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		5.94	8.51	-0.1842	.02	8.90	600										
12		6.90	8.39		.10	8.92		.10	8.92				7.38	5.06	-0.1050	-0.54	5.15
24		6.89	8.36		.14	8.93		.14	8.93				7.34	6.45	-0.0719	-0.45	6.79
36		6.86	8.31		.20	8.95		.20	8.95				7.31	7.22	-0.0817	-0.39	7.69
48		6.90	8.24		.25	8.95		.25	8.95				7.27	7.65	-0.1013	-0.31	8.20
60		6.91	8.22		.30	8.93		.30	8.93				7.23	8.02	-0.1295	-0.24	8.46
72		6.94	8.19		.42	8.91		.42	8.91				7.20	8.21	-0.1506	-0.20	8.62

ALTITUDE (KM) - 7

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		8.54	9.51	-0.1565	.21	10.18	600										
12		8.48	9.35		.29	10.19		.29	10.19				9.07	5.56	-0.0374	-0.42	6.01
24		8.44	9.32		.32	10.20		.32	10.20				9.03	7.18	-0.0449	-0.30	7.99
36		8.40	9.29		.37	10.21		.37	10.21				8.99	8.01	-0.0518	-0.21	9.04
48		8.46	9.22		.42	10.22		.42	10.22				8.92	8.57	-0.0761	-0.14	9.46
60		8.48	9.20		.46	10.17		.46	10.17				8.86	8.97	-0.1014	-0.08	9.69
72		8.52	9.17		.57	10.14		.57	10.14				8.81	9.17	-0.1227	-0.02	9.86

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	10.08	10.64	.8093	.24	11.78	.7819	.7819	11.78	600	.24	11.78	-.1132	.7819	11.78	10.71	-.56	-.46	7.34
24	10.02	10.59	.6355	.26	11.79	.5780	.5780	11.79		.26	11.79	-.1133	.5780	11.79			-.33	9.60
36	9.98	10.56	.5026	.30	11.79	.5026	.5026	11.79		.30	11.79	-.1132	.5026	11.79			-.22	10.72
48	10.06	10.52	.3800	.37	11.80	.3247	.3247	11.80		.37	11.80	-.1185	.3247	11.80			-.16	11.12
60	10.10	10.50	.2730	.39	11.75	.2770	.2770	11.75		.39	11.75	-.1264	.2770	11.75			-.10	11.32
72	10.18	10.42	.1979	.51	11.69	.2158	.2158	11.69		.51	11.69	-.1398	.2158	11.69			-.04	11.49

ALTITUDE (KM) - 9

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	11.67	11.58	.8298	.66	13.40	.7597	.7597	13.40	600	.66	13.40	-.0952	.7597	13.40	12.36	-.23	-.11	9.70
24	11.52	11.52	.6520	.68	13.39	.5581	.5581	13.39		.68	13.39	-.0957	.5581	13.39			-.04	11.08
36	11.60	11.49	.5155	.69	13.41	.3914	.3914	13.41		.69	13.41	-.0996	.3914	13.41			.14	12.25
48	11.68	11.47	.3956	.76	13.41	.3109	.3109	13.41		.76	13.41	-.1022	.3109	13.41			.22	12.68
60	11.75	11.44	.2961	.83	13.36	.2545	.2545	13.36		.83	13.36	-.1161	.2545	13.36			.30	12.95
72	11.85	11.33	.2233	1.02	13.28	.2100	.2100	13.28		1.02	13.28	-.1306	.2100	13.28			.33	13.08

ALTITUDE (KM) - 10

ALTITUDE (10M) - 11

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
MEAN X		S.D. X	R (X,Y)	MEAN Y		S.D. Y	N	GIVEN X		GIVEN Y		S.D. XP		R (XP,Y)	MEAN YP	S.D. YP			
15.45		12.71	.0228	1.47		15.14	800	16.10		.75									
MEAN XP		S.D. XP	R (X,XP)	MEAN YP		S.D. YP	R (XP,Y)	R (YP,X)	S.D. XP		R (XP,YP)	MEAN YP	S.D. YP						
15.39		12.59	.8022	1.58		15.14	-.0275	.0334	7.59		.0779	.81	9.75						
15.35		12.54	.6348	1.62		15.15	-.0563	.0114	9.82		.0911	.90	12.24						
15.35		12.49	.5034	1.68		15.15	-.0945	-.0345	10.97		.1135	.97	13.53						
15.45		12.46	.3881	1.75		15.14	-.1004	-.0453	11.70		.0911	1.04	14.11						
15.55		12.39	.2778	1.89		15.09	-.0557	-.0585	12.19		.0585	1.12	14.51						
15.64		12.27	.1814	2.12		14.93	-.0191	-.0725	12.47		.0432	1.15	14.75						

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (YP, X)	MEAN YP	S.D. YP
	17.24	12.80	.0856	2.23	14.57	600															
12	17.20	12.74	.8065	2.32	14.58		17.85	7.56	.0751	17.85	8.62	17.85	7.56	.0751	17.85	8.62	17.85	7.56	.0751	17.85	8.62
24	17.16	12.72	.6371	2.38	14.59		17.75	9.86	.1083	17.75	11.33	17.75	9.86	.1083	17.75	11.33	17.75	9.86	.1083	17.75	11.33
36	17.19	12.66	.5133	2.48	14.61		17.66	10.98	.1368	17.66	12.68	17.66	10.98	.1368	17.66	12.68	17.66	10.98	.1368	17.66	12.68
48	17.28	12.58	.3902	2.59	14.61		17.54	11.78	.1211	17.54	13.37	17.54	11.78	.1211	17.54	13.37	17.54	11.78	.1211	17.54	13.37
60	17.35	12.50	.2701	2.73	14.59		17.45	12.32	.0961	17.45	13.81	17.45	12.32	.0961	17.45	13.81	17.45	12.32	.0961	17.45	13.81
72	17.42	12.40	.1736	2.96	14.51		17.41	12.59	.0867	17.41	14.09	17.41	12.59	.0867	17.41	14.09	17.41	12.59	.0867	17.41	14.09

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
17.97	1.62

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (YP, X)	MEAN YP	S.D. YP
	17.24	11.55	.0578	3.04	13.03	600															
12	17.17	11.52	.8124	3.14	13.04		17.28	6.72	.0157	17.28	7.10	17.28	6.72	.0157	17.28	7.10	17.28	6.72	.0157	17.28	7.10
24	17.14	11.52	.6702	3.24	13.07		17.30	8.57	.0962	17.30	9.59	17.30	8.57	.0962	17.30	9.59	17.30	8.57	.0962	17.30	9.59
36	17.16	11.47	.5400	3.34	13.09		17.29	9.72	.1164	17.29	10.98	17.29	9.72	.1164	17.29	10.98	17.29	9.72	.1164	17.29	10.98
48	17.22	11.40	.4084	3.48	13.12		17.27	10.54	.1070	17.27	12.18	17.27	10.54	.1070	17.27	12.18	17.27	10.54	.1070	17.27	12.18
60	17.28	11.31	.2792	3.63	13.14		17.26	11.08	.0895	17.26	12.70	17.26	11.08	.0895	17.26	12.70	17.26	11.08	.0895	17.26	12.70
72	17.31	11.23	.1698	3.83	13.12		17.28	11.33	.0818	17.28	14.46	17.28	11.33	.0818	17.28	14.46	17.28	11.33	.0818	17.28	14.46

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
17.25	2.62

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	15.25	9.34	.8252	3.57	10.69	.8588	.8588	.0656	.0425	.0726	16.72	5.27	3.03	5.48
24	15.22	9.33	.7032	3.66	10.69	.7012	.7012	.0589	.0039	.0417	16.53	5.67	2.99	7.61
36	15.24	9.30	.5652	3.75	10.70	.5638	.5638	.0540	-.0059	.0417	16.30	7.76	2.95	8.80
48	15.27	9.25	.4359	3.90	10.74	.4520	.4520	.0462	-.0481	-.0480	16.11	8.38	2.97	9.51
60	15.28	9.20	.3173	4.05	10.78	.3744	.3744	.0327	-.0339	-.0813	15.93	8.81	3.02	9.90
72	15.28	9.16	.2220	4.22	10.80	.3242	.3242	.0198	-.0164	-.1019	15.80	9.05	3.06	10.11

GIVEN
X
Y
16.97
3.08

ALTITUDE (KM) - 15

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	12.31	7.48	.8196	3.26	8.19	.8625	.8625	.0029	.0195	-.0119	12.78	4.28	2.78	4.15
24	12.30	7.48	.6940	3.35	8.19	.7230	.7230	-.0044	-.0060	-.0595	12.75	5.37	2.78	5.67
36	12.28	7.45	.5765	3.44	8.20	.5856	.5856	-.0100	-.0304	-.0882	12.72	6.08	2.79	6.65
48	12.26	7.41	.4605	3.50	8.23	.4721	.4721	-.0219	-.0475	-.1148	12.69	6.59	2.80	7.22
60	12.25	7.40	.3268	3.65	8.24	.3875	.3875	-.0370	-.0470	-.1240	12.63	7.02	2.84	7.56
72	12.20	7.40	.2282	3.77	8.22	.3327	.3327	-.0495	-.0326	-.1294	12.60	7.23	2.85	7.73

GIVEN
X
Y
12.82
2.77

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	8.60	5.77	-0.0834	2.46	8.04	600	8.64	8.64	2.14		
12	24	8.55	5.79	7644	2.52	6.04		8.64	3.71	.0094	2.15	3.39
24	24	8.51	5.78	6954	2.58	6.03		8.67	4.10	.0815	2.14	4.09
36	24	8.46	5.79	5620	2.67	6.05		8.68	4.72	.0725	2.14	4.90
48	24	8.42	5.77	4417	2.76	6.06		8.68	5.08	.0655	2.15	5.27
60	24	8.35	5.80	3517	2.84	6.06		8.69	5.30	.0382	2.17	5.56
72	24	8.27	5.81	2554	2.90	6.05		8.68	5.46	.0118	2.21	5.71

ALTITUDE (KM) - 17

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	4.77	4.75	-0.0842	1.67	4.51	600	4.97	4.97	1.47		
12	24	4.69	4.78	7054	1.75	4.52		4.99	3.34	.0285	1.48	3.28
24	24	4.60	4.81	6479	1.77	4.52		5.05	3.53	.0574	1.48	3.32
36	24	4.53	4.81	5365	1.83	4.51		5.06	3.92	.0362	1.50	3.97
48	24	4.45	4.85	4564	1.87	4.52		5.07	4.12	.0173	1.50	4.06
60	24	4.38	4.85	3505	1.92	4.51		5.08	4.32	-.0111	1.53	4.32
72	24	4.28	4.89	2602	1.96	4.50		5.05	4.44	-.0233	1.52	4.33

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
MR	.82	3.85	-.1412	1.15	3.18	600						1.01	1.00
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN X	S.D. X	R (XP,YP)	MEAN Y	S.D. Y
12	.76	3.86	.6237	1.18	3.17	.5609	-.1438	-.1553	.93	3.00	-.0338	1.05	2.63
24	.70	3.87	.6210	1.21	3.18	.5247	-.1461	-.2563	1.05	2.95	-.0846	1.05	2.57
36	.64	3.87	.5247	1.23	3.18	.3833	-.1519	-.2790	1.06	3.19	-.0205	1.05	2.93
48	.60	3.88	.4667	1.28	3.15	.3079	-.1520	-.3232	1.08	3.28	-.0847	1.08	3.03
60	.55	3.89	.3581	1.29	3.15	.2213	-.1582	-.3267	1.06	3.44	-.0677	1.08	3.10
72	.46	3.92	.2965	1.31	3.13	.1883	-.1633	-.2766	1.05	3.57	-.0910	1.09	3.12

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
MR	-1.18	3.34	-.1005	.59	2.92	600						-1.89	.50
DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN X	S.D. X	R (XP,YP)	MEAN Y	S.D. Y
12	-2.05	3.34	.5474	.62	2.91	.4513	-.0991	-.0767	-1.90	2.80	-.0875	.53	2.25
24	-2.13	3.36	.5372	.62	2.90	.4663	-.1038	-.1805	-1.83	2.65	-.0806	.54	2.62
36	-2.21	3.35	.4328	.64	2.90	.3007	-.1121	-.1473	-1.83	2.93	-.0567	.54	2.40
48	-2.26	3.36	.4836	.68	2.90	.1798	-.1089	-.1957	-1.78	3.12	-.0714	.55	2.47
60	-2.33	3.37	.3220	.70	2.91	.1464	-.1106	-.1906	-1.81	3.12	-.0500	.53	2.48
72	-2.41	3.33	.2961	.71	2.91	.0528	-.1119	-.2172	-1.79	3.13	-.0861	.56	2.92

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (52214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
12	-4.13	3.14	-0.373	.25	2.14	800

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-4.18	3.14	.5432	.26	2.14	.2698	-.0297	-.0250	-.0183	-4.06	2.84	-.0281	.22	2.06
24	-4.26	3.15	.5316	.28	2.15	.2339	-.0284	-.0113	-.0974	-4.08	2.85	-.0291	.22	2.08
36	-4.32	3.16	.4281	.31	2.16	.1357	-.0263	-.0502	-.0688	-4.08	2.86	-.0091	.22	2.12
48	-4.40	3.19	.4117	.33	2.18	.0567	-.0332	-.0658	-.0486	-3.97	2.86	-.0092	.22	2.14
60	-4.47	3.21	.3078	.35	2.17	-.0167	-.0475	-.1418	-.0458	-3.59	2.98	-.0057	.21	2.12
72	-4.56	3.23	.2993	.36	2.17	.0005	-.0578	-.1148	-.0998	-3.56	2.98	-.0039	.21	2.13

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
12	-5.98	3.05	-.0893	.05	2.02	800

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-5.70	3.06	.5136	.07	2.01	.2058	-.0940	-.1210	-.0325	-5.02	2.61	-.0231	.09	1.96
24	-5.78	3.04	.5011	.08	2.01	.1854	-.0710	-.0286	-.0879	-5.95	2.64	-.0534	.04	1.98
36	-5.85	3.04	.4446	.09	2.06	.1168	-.0893	-.0693	-.0693	-5.88	2.73	-.0233	.07	2.00
48	-5.92	3.06	.4160	.09	2.02	-.0078	-.0893	-.1242	-.036	-5.82	2.77	-.0207	.11	2.00
60	-6.02	3.04	.3614	.10	2.03	.0258	-.0936	-.0762	-.0977	-5.75	2.84	-.0437	.07	2.01
72	-6.09	3.06	.3658	.09	2.04	-.0431	-.1853	-.1117	-.1007	-5.73	2.84	-.0445	.03	2.00

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QUADRIVARIATE BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 X = VIAT T;
 Y = VIAT T;
 XP = VIAT T + DT;
 YP = VIAT T + DT;
 ALPHA ANGLE = 90.0

ALTITUDE (KM) - 22

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,XP)	MEAN Y	S.D. Y	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
DT	-5.86	3.04	-0.372	-1.1	2.03	600	-6.83	2.59	-0.356	-1.17	1.99
HP	-5.96	3.12	-0.372	-1.1	2.03	600	-6.83	2.59	-0.356	-1.17	1.99
12	-5.96	3.12	-0.372	-1.1	2.03	600	-6.83	2.59	-0.356	-1.17	1.99
24	-5.96	3.12	-0.372	-1.1	2.03	600	-6.83	2.59	-0.356	-1.17	1.99
36	-5.96	3.12	-0.372	-1.1	2.03	600	-6.83	2.59	-0.356	-1.17	1.99
48	-5.96	3.12	-0.372	-1.1	2.03	600	-6.83	2.59	-0.356	-1.17	1.99
60	-5.96	3.12	-0.372	-1.1	2.03	600	-6.83	2.59	-0.356	-1.17	1.99
72	-5.96	3.12	-0.372	-1.1	2.03	600	-6.83	2.59	-0.356	-1.17	1.99

ALTITUDE (KM) - 23

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,XP)	MEAN Y	S.D. Y	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
DT	-7.92	3.21	-0.250	-0.35	1.81	600	-7.88	2.78	-0.134	-0.35	1.90
HP	-7.92	3.21	-0.250	-0.35	1.81	600	-7.88	2.78	-0.134	-0.35	1.90
12	-7.92	3.21	-0.250	-0.35	1.81	600	-7.88	2.78	-0.134	-0.35	1.90
24	-7.92	3.21	-0.250	-0.35	1.81	600	-7.88	2.78	-0.134	-0.35	1.90
36	-7.92	3.21	-0.250	-0.35	1.81	600	-7.88	2.78	-0.134	-0.35	1.90
48	-7.92	3.21	-0.250	-0.35	1.81	600	-7.88	2.78	-0.134	-0.35	1.90
60	-7.92	3.21	-0.250	-0.35	1.81	600	-7.88	2.78	-0.134	-0.35	1.90
72	-7.92	3.21	-0.250	-0.35	1.81	600	-7.88	2.78	-0.134	-0.35	1.90

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	R (XP, YP)	MEAN YP	S.D. YP
	-8.53	3.34	-0.451	-38	1.92	600						-8.52			
12	-8.63	3.33	.5967	.38	1.91		-8.46	2.68	.0224	-8.40	1.90			-39	1.90
24	-8.73	3.34	.5325	.37	1.93		-8.40	2.69	-.0486	-8.34	1.92			-39	1.92
36	-8.86	3.36	.5350	.37	1.93		-8.29	2.81	-.0254	-8.28	1.91			-41	1.91
48	-8.97	3.37	.5192	.37	1.94		-8.28	2.95	.0268	-8.28	1.91			-41	1.91
60	-9.05	3.37	.4509	.36	1.94		-8.24	2.98	-.0054	-8.24	1.91			-41	1.91
72	-9.17	3.36	.4418	.36	1.95		-8.24	2.99	-.0197	-8.24	1.92			-41	1.92

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	R (XP, YP)	MEAN YP	S.D. YP
	-9.35	3.57	-.0514	-31	2.03	600						-9.33			
12	-9.48	3.51	.6618	.32	2.03		-9.25	2.67	.0024	-9.19	2.01			-32	2.01
24	-9.59	3.49	.6176	.35	2.04		-9.19	2.81	-.0962	-9.12	2.02			-32	2.02
36	-9.73	3.50	.5825	.33	2.05		-9.06	3.00	-.0252	-9.01	2.02			-33	2.02
48	-9.86	3.53	.5400	.32	2.05		-8.95	3.04	-.0222	-8.95	2.02			-33	2.02
60	-9.99	3.52	.5237	.30	2.10		-8.95	3.06	-.0343	-8.95	2.02			-34	2.02
72	-10.11	3.51	.5125	.28	2.11		-8.95	3.06	-.0282	-8.95	2.02			-34	2.02

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION 19214 - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	-9.88	3.80	-1.108	-1.18	2.18	600						-9.95	-1.17
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP		R (Y,YP)	R (XP,Y)	R (YP,X)				
12	-10.00	3.79	.6951	-1.19	2.17		.1579	-.1102	-.0530	-9.85	2.73	-.0135	-1.18
24	-10.14	3.76	.6731	-2.20	2.17		.0302	-.1096	-.0764	-9.75	2.81	-.0632	-1.19
36	-10.27	3.72	.6142	-1.17	2.11		.0355	-.1209	-.0528	-9.68	3.00	-.0331	-1.20
48	-10.41	3.73	.5709	-1.14	2.09		.0033	-.1314	-.0419	-9.61	3.12	-.0479	-1.21
60	-10.56	3.69	.5338	-1.10	2.14		-.0456	-.1405	-.0735	-9.55	3.21	-.0647	-1.23
72	-10.69	3.66	.4977	-1.23	2.13		-.0194	-.1310	-.0332	-9.50	3.30	-.0659	-1.23

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	-10.08	3.87	-.0108	-.20	2.15	600						-10.09	-.22
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP		R (Y,YP)	R (XP,Y)	R (YP,X)				
12	-10.21	3.82	.6577	-.21	2.14		.1784	-.0171	-.0490	-10.00	2.91	.0352	-.20
24	-10.34	3.82	.6374	-.19	2.12		.0836	-.0152	-.0375	-9.91	2.92	.0235	-.20
36	-10.48	3.75	.6163	-.19	2.10		.0743	-.0253	-.0334	-9.83	3.05	.0188	-.21
48	-10.51	3.73	.5878	-.18	2.11		.0110	-.0361	-.0155	-9.75	3.13	.0115	-.21
60	-10.73	3.68	.5407	-.13	2.16		-.0230	-.0325	-.0144	-9.71	3.26	.0212	-.22
72	-10.87	3.69	.5033	-.14	2.16		-.0215	-.0123	-.0000	-9.63	3.35	.0133	-.22

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
6	1/65 - 12/74	0	90.0	2.43	2.32	-.5661	-1.88	2.37	600
6	1/65 - 12/74	1	90.0	.80	3.15	-.2355	-3.51	4.34	600
6	1/65 - 12/74	2	90.0	.80	4.06	-.4029	-2.59	5.16	600
6	1/65 - 12/74	3	90.0	2.41	5.52	-.3349	-1.41	6.16	600
6	1/65 - 12/74	4	90.0	3.90	6.70	-.2591	-.52	6.94	600
6	1/65 - 12/74	5	90.0	5.47	7.56	-.2119	-.19	7.75	600
6	1/65 - 12/74	6	90.0	6.94	8.51	-.1842	.02	8.90	600
6	1/65 - 12/74	7	90.0	8.54	9.51	-.1565	.21	10.18	600
6	1/65 - 12/74	8	90.0	10.15	10.83	-.1110	.17	11.78	600
6	1/65 - 12/74	9	90.0	11.74	11.76	-.0905	.58	13.39	600
6	1/65 - 12/74	10	90.0	13.52	12.42	-.0338	.94	14.62	600
6	1/65 - 12/74	11	90.0	15.45	12.71	.0228	1.47	15.14	600
6	1/65 - 12/74	12	90.0	17.24	12.80	.0856	2.23	14.57	600
6	1/65 - 12/74	13	90.0	17.24	11.55	.0578	3.04	13.03	600
6	1/65 - 12/74	14	90.0	15.31	9.34	.0754	3.48	10.69	600
6	1/65 - 12/74	15	90.0	12.35	7.48	.0104	3.20	8.20	600
6	1/65 - 12/74	16	90.0	8.60	5.77	-.0854	2.46	6.04	600
6	1/65 - 12/74	17	90.0	4.77	4.75	-.0942	1.67	4.51	600
6	1/65 - 12/74	18	90.0	.82	3.65	-.1412	1.15	3.18	600
6	1/65 - 12/74	19	90.0	-1.99	3.34	-.1005	.59	2.52	600
6	1/65 - 12/74	20	90.0	-4.13	3.14	-.0373	.25	2.14	600
6	1/65 - 12/74	21	90.0	-5.58	3.05	-.0593	.05	2.02	600
6	1/65 - 12/74	22	90.0	-6.86	3.04	-.0372	-.17	2.03	600
6	1/65 - 12/74	23	90.0	-7.92	3.21	-.0250	-.35	1.91	600
6	1/65 - 12/74	24	90.0	-8.53	3.34	-.0451	-.38	1.92	600
6	1/65 - 12/74	25	90.0	-9.35	3.57	-.0514	-.31	2.03	600
6	1/65 - 12/74	26	90.0	-9.88	3.80	-.1081	-.18	2.16	600
6	1/65 - 12/74	27	90.0	-10.08	3.87	-.0108	-.20	2.15	600

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.01	1.93	-.4805	-1.62	1.82	.0339	.0339	-.4551	1.929	-.1929	.2103	2.00	1.69	-.4355	-1.57	1.74
24	2.01	1.93	-.6344	-1.53	1.85	.4452	.4452	-.4480	1.929	-.3694	-.4066	2.05	1.47	-.2756	-1.58	1.59
36	2.01	1.92	-.4940	-1.65	1.87	-.0044	-.0044	-.4545	1.929	-.2613	.2634	2.00	1.68	-.4363	-1.57	1.74
48	2.02	1.93	-.5522	-1.67	1.87	.2929	.2929	-.4611	1.929	-.3796	-.2970	2.06	1.60	-.3212	-1.61	1.66
60	2.01	1.94	-.5263	-1.52	1.86	-.0901	-.0901	-.4754	1.929	-.2726	.2726	2.00	1.64	-.3901	-1.59	1.75
72	2.01	1.93	-.5529	-1.62	1.85	.2410	.2410	-.4726	1.929	-.3254	-.2928	2.06	1.61	-.3542	-1.61	1.71

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	R (YP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.24	2.54	.1243	-1.91	3.89	.6331	.6331	-.1969	620	-.2406	-.2640	.23	2.44	-.0415	-1.83	2.96
24	.24	2.52	.4726	-1.92	3.91	.4974	.4974	-.2015	620	-.0178	-.0789	.25	2.24	-.2713	-1.83	3.34
36	.26	2.53	-.1182	-1.96	3.91	.1732	.1732	-.2049	620	-.0379	-.0788	.23	2.51	-.1980	-1.87	3.81
48	.26	2.52	-.2226	-1.96	3.93	.6541	.6541	-.2022	620	.1624	.0425	.28	2.47	-.2625	-1.88	3.80
60	.27	2.53	-.2020	-1.93	3.90	-.0803	-.0803	-.2008	620	.0586	-.0221	.24	2.48	-.2045	-1.91	3.86
72	.28	2.52	.1753	-1.91	3.87	-.0522	-.0522	-.2062	620	.2143	.0658	.25	2.49	-.2542	-1.90	3.78

ALTITUDE (KM) - 2

ALTIMETER (KM) - 3[illegible]

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0
 $X = U(AT \ T)$
 $Y = V(AT \ T)$
 $XP = U(AT \ T + DT)$
 $YP = V(AT \ T + DT)$

ALTITUDE (KM) - 4

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.74	4.82	.7633	2.81	4.66	.0035	2.82	4.66	620	1.54	3.12	.0621	3.06	3.14
24	1.71	4.78	.6076	2.81	4.64		.7368	.0007		1.60	3.85	-.0591	3.00	3.79
36	1.71	4.75	.4499	2.79	4.62		.5788	.0069		1.66	4.34	-.0259	2.95	4.25
48	1.66	4.73	.3606	2.79	4.63		.4087	.0049		1.71	4.53	-.0255	2.90	4.45
60	1.63	4.72	.2856	2.77	4.63		.2921	.0093		1.73	4.65	-.0142	2.90	4.53
72	1.57	4.70	.2383	2.75	4.62		.2334	.0076		1.75	4.72	-.0021	2.89	4.58

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.74	4.82	.7633	2.81	4.66	.0035	2.82	4.66	620	1.54	3.12	.0621	3.06	3.14
24	1.71	4.78	.6076	2.81	4.64		.7368	.0007		1.60	3.85	-.0591	3.00	3.79
36	1.71	4.75	.4499	2.79	4.62		.5788	.0069		1.66	4.34	-.0259	2.95	4.25
48	1.66	4.73	.3606	2.79	4.63		.4087	.0049		1.71	4.53	-.0255	2.90	4.45
60	1.63	4.72	.2856	2.77	4.63		.2921	.0093		1.73	4.65	-.0142	2.90	4.53
72	1.57	4.70	.2383	2.75	4.62		.2334	.0076		1.75	4.72	-.0021	2.89	4.58

ALTITUDE (KM) - 5

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.23	5.42	.7945	3.42	4.82	.0642	3.40	4.83	620	2.06	3.31	.0502	3.68	3.25
24	2.18	5.38	.6626	3.41	4.80		.7369	.0465		2.12	4.05	.0530	3.62	3.97
36	2.16	5.37	.5083	3.41	4.76		.5640	.0436		2.16	4.70	.0530	3.56	4.43
48	2.12	5.36	.4232	3.39	4.76		.3935	.0441		2.19	4.94	.0674	3.52	4.61
60	2.10	5.34	.3165	3.38	4.75		.2913	.0487		2.21	5.18	.0637	3.48	4.74
72	2.06	5.33	.2500	3.33	4.74		.1862	.0568		2.23	5.29	.0643	3.47	4.78

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.23	5.42	.7945	3.42	4.82	.0642	3.40	4.83	620	2.06	3.31	.0502	3.68	3.25
24	2.18	5.38	.6626	3.41	4.80		.7369	.0465		2.12	4.05	.0530	3.62	3.97
36	2.16	5.37	.5083	3.41	4.76		.5640	.0436		2.16	4.70	.0530	3.56	4.43
48	2.12	5.36	.4232	3.39	4.76		.3935	.0441		2.19	4.94	.0674	3.52	4.61
60	2.10	5.34	.3165	3.38	4.75		.2913	.0487		2.21	5.18	.0637	3.48	4.74
72	2.06	5.33	.2500	3.33	4.74		.1862	.0568		2.23	5.29	.0643	3.47	4.78

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (19214) - VANDENBERG
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (M) - 5

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	2.85	6.19	.8035	3.97	5.28	.7439	.7439	.0781	.1390	.0167	2.68	3.70	.0212	4.33	3.51
24	2.80	6.17	.6560	3.99	5.27	.5413	.5413	.0748	.1434	.0102	2.76	4.70	.0203	4.21	4.42
36	2.76	6.16	.5131	4.00	5.24	.3650	.3650	.0791	.0904	-.0105	2.80	5.35	.0731	4.12	4.92
48	2.73	6.16	.4071	3.99	5.23	.2643	.2643	.0819	.0528	-.0141	2.83	5.69	.0876	4.08	5.19
60	2.70	6.15	.3144	4.02	5.21	.1839	.1839	.0858	.0427	.0026	2.86	5.92	.0829	4.03	5.10
72	2.68	6.12	.2362	3.96	5.17	.1529	.1529	.0949	.0370	.0012	2.87	6.06	.0839	4.03	5.23

ALTITUDE (M) - 7

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	3.76	6.94	.8202	4.75	6.08	.7454	.7454	.0471	.0877	-.0107	3.47	3.98	.0397	5.21	4.04
24	3.72	6.94	.6595	4.80	6.09	.5466	.5466	.0484	.0972	-.0192	3.56	5.24	.0224	5.05	5.08
36	3.67	6.94	.5334	4.84	6.06	.3774	.3774	.0542	.0635	-.0163	3.64	5.90	.0428	4.94	5.63
48	3.64	6.93	.4129	4.84	6.06	.2682	.2682	.0596	.0087	-.0181	3.69	6.35	.0864	4.88	5.86
60	3.64	6.93	.3191	4.89	6.06	.1978	.1978	.0568	-.0187	.0055	3.74	6.62	.0640	4.84	5.96
72	3.63	6.92	.2576	4.85	6.06	.1819	.1819	.0761	-.0372	-.0073	3.75	6.74	.0584	4.84	5.97

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	4.94	7.87	.8191	5.90	6.95	.7644	5.86	6.95	620	4.60	4.52	.0539	6.45	4.47
24	4.89	7.85	.6767	5.95	6.94	.5730				4.70	5.80	.0697	6.27	5.71
36	4.86	7.83	.5423	6.00	6.93	.4262				4.78	6.62	.0764	6.16	6.28
48	4.78	7.84	.4072	6.02	6.93	.3275				4.88	7.21	.0783	6.09	6.56
60	4.78	7.80	.2965	6.11	6.93	.2837				4.94	7.54	.0599	6.04	6.65
72	4.76	7.79	.2389	6.11	6.95	.2566				4.96	7.57	.0595	6.03	6.70

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
4.47	6.69

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	6.09	8.70	.8204	7.35	7.80	.7742	7.29	7.80	620	5.71	4.98	.0392	7.94	4.94
24	6.04	8.67	.6779	7.43	7.78	.5775				5.82	6.41	.0539	7.74	5.37
36	5.99	8.71	.5222	7.51	7.75	.4294				5.93	7.44	.0507	7.61	7.04
48	5.92	8.64	.3808	7.55	7.77	.3444				6.05	8.07	.0282	7.54	7.31
60	5.88	8.57	.2753	7.62	7.77	.3071				6.10	8.38	.0148	7.49	7.40
72	5.84	8.55	.2100	7.63	7.79	.2838				6.11	8.53	.0165	7.49	7.46

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
5.56	8.20

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	24	7.28	9.47	-0.109	9.00	8.60	620	6.77	5.13	.0904	9.77	5.20	6.62	10.02
DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	S.D. YP
12	24	7.21	9.46	.8405	9.07	8.59	.7965	-.0304	-.0155	-.0318	6.77	5.13	.0904	9.77
36	48	6.93	9.34	.5310	9.21	8.54	.4680	-.0515	-.0169	-.0325	6.90	6.86	.0656	9.55
60	72	6.88	9.27	.2750	9.35	8.56	.3575	-.0200	-.0215	-.0429	7.01	8.02	.0735	9.41
				.1998	9.37	8.57	.3313	-.0933	-.0333	-.0222	7.20	9.11	.0145	9.26
								-.0804	.0006	-.0221	7.22	9.28	.0136	9.23

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	24	8.53	9.98	-.0191	10.92	9.35	620	8.11	5.28	.1432	11.04	5.32	7.96	12.10
DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	S.D. YP
12	24	8.44	9.95	.8423	10.99	9.33	.8168	-.0576	-.0243	-.0376	8.11	5.28	.1432	11.04
36	48	8.32	9.94	.5406	11.17	9.36	.5195	-.0771	-.0254	-.0233	8.23	7.11	.0712	11.58
60	72	8.12	9.85	.2312	11.26	9.44	.4674	-.0318	-.0311	-.0353	8.32	8.39	.0631	11.43
				.2133	11.31	9.45	.4345	-.0979	-.0165	-.0170	8.43	9.15	.0271	11.34
							.3968	-.0917	-.0167	-.0219	8.48	9.55	.0103	11.29
								-.0654	-.0167	-.0219	8.50	9.75	.0024	11.23

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	R (XP,Y)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	9.46	9.94	-0.163	12.23	9.69	620	9.35	9.95	-0.222	12.35	9.67	9.46	8.88	0.075	12.66	9.64	9.43	9.41	0.075	12.74	8.30
24							9.30	9.97	-0.261	12.50	9.70	9.46	8.88	0.075	12.66	9.64	9.43	9.41	0.075	12.74	8.30
36							9.20	9.96	-0.315	12.55	9.71	9.46	8.88	0.075	12.66	9.64	9.43	9.41	0.075	12.74	8.30
48							9.05	9.95	-0.366	12.57	9.81	9.46	8.88	0.075	12.66	9.64	9.43	9.41	0.075	12.74	8.30
60							8.98	9.95	-0.414	12.64	9.85	9.46	8.88	0.075	12.66	9.64	9.43	9.41	0.075	12.74	8.30
72							8.91	9.95	-0.467	12.71	9.88	9.46	8.88	0.075	12.66	9.64	9.43	9.41	0.075	12.74	8.30

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	R (XP,Y)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	9.65	9.54	0.034	12.21	9.29	620	9.56	9.64	0.274	12.31	9.28	9.65	9.21	0.052	12.75	9.10	9.33	9.33	0.052	12.75	8.04
24							9.48	9.55	0.160	12.43	9.34	9.65	9.21	0.052	12.75	9.10	9.33	9.33	0.052	12.75	8.04
36							9.37	9.54	0.115	12.49	9.37	9.65	9.21	0.052	12.75	9.10	9.33	9.33	0.052	12.75	8.04
48							9.20	9.57	0.026	12.51	9.44	9.65	9.21	0.052	12.75	9.10	9.33	9.33	0.052	12.75	8.04
60							9.11	9.63	0.026	12.55	9.47	9.65	9.21	0.052	12.75	9.10	9.33	9.33	0.052	12.75	8.04
72							9.03	9.64	0.026	12.59	9.47	9.65	9.21	0.052	12.75	9.10	9.33	9.33	0.052	12.75	8.04

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 80.0
 X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT)
 YP = V(AT T + DT)

ALTITUDE (M) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	P (X, Y)	MEAN XP	S.D. XP	P (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	P (XP, YP)	MEAN YP	S.D. YP
12	8.58	8.47	.1050	11.05	8.28	.0220	8.43	4.53	.1234	12.33	4.40	8.30	8.30	.1233	12.33	4.40
24	8.50	8.47	.1050	11.05	8.28	.0220	8.43	4.53	.1234	12.33	4.40	8.30	8.30	.1233	12.33	4.40
36	8.41	8.48	.1050	11.05	8.28	.0220	8.53	5.69	.1258	11.68	5.40	8.30	8.30	.1233	12.33	4.40
48	8.30	8.47	.1050	11.05	8.28	.0220	8.61	6.68	.1411	11.73	6.34	8.30	8.30	.1233	12.33	4.40
60	8.15	8.43	.1050	11.05	8.28	.0220	8.70	7.22	.1575	11.67	6.60	8.30	8.30	.1233	12.33	4.40
72	8.08	8.54	.1050	11.05	8.28	.0220	8.72	7.68	.1736	11.61	6.98	8.30	8.30	.1233	12.33	4.40
84	8.03	8.54	.1050	11.05	8.28	.0220	8.70	7.85	.1856	11.58	7.12	8.30	8.30	.1233	12.33	4.40

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (M) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	P (X, Y)	MEAN XP	S.D. XP	P (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	P (XP, YP)	MEAN YP	S.D. YP
12	8.15	7.07	.1810	8.55	6.18	.0220	8.03	4.27	.1145	9.12	3.58	5.88	5.88	.1560	8.39	5.40
24	8.04	7.28	.1810	8.55	6.18	.0220	8.03	4.27	.1145	9.12	3.58	5.88	5.88	.1560	8.39	5.40
36	7.98	7.08	.1810	8.55	6.18	.0220	8.21	5.64	.1384	9.32	4.71	5.88	5.88	.1560	8.39	5.40
48	7.78	7.03	.1810	8.55	6.18	.0220	8.27	5.82	.1506	9.33	4.82	5.88	5.88	.1560	8.39	5.40
60	7.70	7.12	.1810	8.55	6.18	.0220	8.28	5.95	.1543	9.32	4.82	5.88	5.88	.1560	8.39	5.40
72	7.67	7.14	.1810	8.55	6.18	.0220	8.27	5.97	.1560	9.39	4.82	5.88	5.88	.1560	8.39	5.40

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ORIGINAL PAGE IS
OF POOR QUALITY

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (3224) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	2.55	5.20	.7422	5.93	4.65	620	2.59	3.46	-.0295	6.11	3.89	2.46	6.37
24	2.49	5.17	.7394	5.94	4.66		2.61	3.49	.0938	6.19	3.26		
36	2.40	5.16	.5605	5.95	4.67		2.71	4.27	.0363	6.26	4.23		
48	2.32	5.20	.5442	5.91	4.68		2.74	4.35	.1302	6.12	3.98		
60	2.30	5.21	.4059	5.89	4.70		2.76	4.70	.0236	6.02	4.47		
72	2.29	5.24	.3821	5.88	4.70		2.72	4.79	.1547	6.07	4.24		

ALTITUDE (KM) - 17

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	-1.78	3.91	.6624	3.85	3.52	620	-1.67	2.94	.1974	3.94	3.37	-1.72	4.02
24	-1.84	3.91	.6952	3.87	3.59		-1.62	2.82	.1442	3.98	2.79		
36	-1.90	3.91	.5331	3.88	3.58		-1.61	3.32	.2246	3.82	3.53		
48	-1.95	3.95	.4957	3.85	3.56		-1.59	3.41	.1873	3.96	3.26		
60	-1.90	3.97	.3859	3.86	3.62		-1.60	3.62	.2479	3.89	3.56		
72	-1.92	3.97	.3169	3.84	3.63		-1.61	3.71	.2144	3.93	3.41		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
		-3.43	3.29	.2395	2.23	2.78	620							-3.44	2.28					
12		-3.49	3.26	.5911	2.26	2.80	.2835	.2348	.0809	.1411						-3.40	2.67	.2450	2.26	2.67
24		-3.54	3.25	.6567	2.26	2.80	.4633	.2434	.2558	.0847						-3.36	2.46	.1593	2.28	2.42
36		-3.58	3.25	.4699	2.27	2.80	.2055	.2363	.0526	.1364						-3.35	2.90	.2428	2.26	2.72
48		-3.65	3.23	.4387	2.24	2.81	.2439	.2311	.1730	.1050						-3.34	2.95	.1883	2.29	2.68
60		-3.67	3.25	.3122	2.24	2.82	.1312	.2365	.0334	.0917						-3.35	3.12	.2408	2.26	2.76
72		-3.69	3.28	.2651	2.24	2.82	.1874	.2355	.1010	.1077						-3.36	3.16	.2170	2.28	2.73

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
		-5.61	2.71	.1653	1.43	2.13	620							-5.62	1.44					
12		-5.67	2.70	.4167	1.43	2.13	.2134	.1584	-.0444	.0730						-5.59	2.46	.2058	1.43	2.07
24		-5.70	2.73	.5573	1.44	2.11	.2544	.1602	.1490	.0112						-5.56	2.22	.1265	1.44	2.04
36		-5.73	2.72	.3333	1.45	2.11	.1203	.1622	-.0380	.0679						-5.57	2.55	.1895	1.42	2.11
48		-5.80	2.76	.3903	1.43	2.10	.0907	.1521	.0625	.0442						-5.54	2.49	.1552	1.44	2.11
60		-5.82	2.76	.2328	1.42	2.11	.0250	.1373	-.0171	.0230						-5.56	2.63	.1744	1.43	2.12
72		-5.84	2.78	.2866	1.43	2.10	.0283	.1405	.0755	.0188						-5.55	2.59	.1508	1.44	2.12

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
		-7.34	2.49	.1657	.85	1.99	620										
12		-7.39	2.49	.3684	.86	1.97		-7.34	2.31	.1715	.85	1.98					
24		-7.41	2.52	.4463	.87	1.97		-7.32	2.23	.1526	.84	1.94					
36		-7.44	2.49	.3082	.86	1.96		-7.32	2.37	.1735	.85	1.98					
48		-7.47	2.51	.2766	.83	1.98		-7.32	2.40	.1728	.85	1.98					
60		-7.49	2.49	.1600	.80	1.97		-7.32	2.46	.1686	.85	1.98					
72		-7.48	2.49	.1714	.80	1.98		-7.32	2.46	.1805	.84	1.98					

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
		-9.10	2.49	.0821	.44	1.99	620										
12		-9.13	2.48	.3727	.43	1.98		-9.09	2.28	.0705	.44	1.97					
24		-9.16	2.48	.4735	.43	1.98		-9.07	2.18	.0576	.44	1.97					
36		-9.19	2.47	.3410	.42	1.98		-9.07	2.33	.0943	.44	1.98					
48		-9.21	2.48	.2680	.40	1.98		-9.07	2.39	.0671	.44	1.98					
60		-9.24	2.50	.2170	.40	1.96		-9.07	2.43	.0883	.44	1.98					
72		-9.25	2.51	.1742	.40	1.96		-9.08	2.45	.0836	.44	1.99					

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - JUL
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 50.0

ALTITUDE (CM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	P (YP, X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
		-10.56	2.43		.5750	.10	1.99			820				-10.84	.05		
12	24	-10.56	2.42	.4534	.28	1.99		.328	.3713	-.1352	.3772	-.10.84	2.15	.1549	.03	1.97	
24	36	-10.71	2.42	.4737	.27	1.97		.1942	.3663	-.0294	.3230	-.10.83	2.14	.0845	.09	1.96	
36	48	-10.72	2.45	37.05	.28	1.97		.3283	.3772	-.0576	.3285	-.10.83	2.25	.0712	.03	1.99	
48	60	-10.75	2.45	32.35	.28	1.98		.3595	.3632	-.0255	-.0123	-.10.82	2.28	.0877	.10	1.98	
60	72	-10.81	2.52	28.25	.26	1.98		.3577	.3595	-.0814	.0750	-.10.81	2.32	.0982	.09	1.98	
72		-10.84	2.52	20.45	.26	1.96		.3595	.3618	-.0133	-.0587	-.10.82	2.37	.0821	.03	1.99	

ALTITUDE (CM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	P (Y, X)	MEAN XP	S.D. XP	P (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
		-11.96	2.54	.0385	-.12	2.03	620							-11.97	-.19		
12	24	-11.97	2.55	.4334	-.11	1.99			-.11	2.29	.0312	-.12	1.97				
24	36	-11.99	2.56	4.534	-.10	2.03			-.10	2.25	.0828	-.14	1.96				
36	48	-12.02	2.59	37.05	-.09	2.02			-.09	2.38	.0512	-.12	1.98				
48	60	-12.06	2.61	29.01	-.08	2.01			-.08	2.43	.0433	-.12	1.99				
60	72	-12.12	2.68	25.36	-.08	1.99			-.08	2.45	.0511	-.14	1.97				
72		-12.14	2.69	20.43	-.07	1.99			-.07	2.48	.0226	-.12	1.99				

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP,Y)	MEAN YP	S.D. YP
		-13.25	2.61	.0240	-1.17	2.12	620										
12		-13.26	2.61	.4472	.0670	.0136		-13.22	2.32	.0440	-13.22	2.11					
24		-13.29	2.63	.4541	.1245	.0231		-13.20	2.32	.0624	-13.20	2.10					
36		-13.30	2.64	.3784	.0362	.0156		-13.21	2.41	.0687	-13.21	2.11					
48		-13.32	2.64	.3010	.0392	.0135		-13.21	2.48	.0478	-13.21	2.12					
60		-13.38	2.67	.2693	.0144	-.0042		-13.20	2.51	.0508	-13.20	2.11					
72		-13.41	2.70	.1901	.0251	-.0136		-13.21	2.56	.0328	-13.21	2.12					

GIVEN
X
-13.19
-1.18

ALTITUDE (KM) - 25

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP,Y)	MEAN YP	S.D. YP
		-14.36	2.76	.0014	.06	2.09	620										
12		-14.40	2.75	.5149	.0307	-.0048		-14.32	2.37	.0472	-14.32	2.08					
24		-14.44	2.75	.5043	.1013	-.0345		-14.30	2.39	.0201	-14.30	2.08					
36		-14.43	2.77	.3870	.0447	-.0122		-14.30	2.55	.0627	-14.30	2.07					
48		-14.48	2.79	.3828	.0372	-.0382		-14.29	2.54	.0241	-14.29	2.08					
60		-14.54	2.80	.3172	-.0023	-.0025		-14.28	2.60	.0361	-14.28	2.08					
72		-14.59	2.83	.2968	.0562	-.0131		-14.28	2.63	.0289	-14.28	2.08					

GIVEN
X
-14.31
-1.02

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
	-15.11	2.88	.0669	.25	2.11	620						-15.02	.14	
DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-15.14	2.88	.4931	.26	2.12	.0909	.0699	-.0834	.0031	-15.04	2.50	.1288	.23	2.10
24	-15.18	2.89	.5292	.26	2.11	.1223	.0765	-.0605	-.0457	-15.01	2.43	.1316	.22	2.09
36	-15.22	2.90	.3414	.25	2.11	.0309	.0745	-.1113	-.0456	-15.03	2.70	.1164	.22	2.10
48	-15.24	2.92	.3422	.25	2.12	.0152	.0570	-.0766	-.0377	-15.03	2.70	.1038	.23	2.11
60	-15.28	2.93	.2469	.24	2.07	.0177	.0631	-.0599	-.0223	-15.04	2.79	.0854	.23	2.11
72	-15.30	2.95	.2508	.25	2.09	.0336	.0579	-.0841	-.0248	-15.03	2.78	.0941	.22	2.11

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-15.58	3.03	.0456	.15	2.17	620	-15.52	.06				
								</				

BIVARIATE NORMAL STATISTICS OF X,Y

STATION (93214) - VANDEBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
7	1/65 - 12/74	0	90.0	2.03	1.93	-.4607	-1.61	1.92	620
7	1/65 - 12/74	1	90.0	.25	2.54	-.2064	-1.90	3.87	620
7	1/65 - 12/74	2	90.0	-.25	3.04	-.1869	-.16	3.92	620
7	1/65 - 12/74	3	90.0	.88	4.03	-.1257	1.60	4.32	620
7	1/65 - 12/74	4	90.0	1.76	4.86	.0035	2.82	4.66	620
7	1/65 - 12/74	5	90.0	2.26	5.46	.0642	3.40	4.83	620
7	1/65 - 12/74	6	90.0	2.90	6.24	.0861	3.94	5.29	620
7	1/65 - 12/74	7	90.0	3.83	6.98	.0503	4.72	6.08	620
7	1/65 - 12/74	8	90.0	5.03	7.90	.0402	5.86	6.95	620
7	1/65 - 12/74	9	90.0	6.17	8.72	.0001	7.29	7.80	620
7	1/65 - 12/74	10	90.0	7.28	9.47	-.0109	9.00	8.60	620
7	1/65 - 12/74	11	90.0	8.53	9.98	-.0191	10.92	9.35	620
7	1/65 - 12/74	12	90.0	9.46	9.98	-.0163	12.23	9.69	620
7	1/65 - 12/74	13	90.0	9.65	9.54	.0354	12.21	9.29	620
7	1/65 - 12/74	14	90.0	8.59	8.47	.1050	11.05	8.28	620
7	1/65 - 12/74	15	90.0	6.15	7.07	.1610	8.55	6.18	620
7	1/65 - 12/74	16	90.0	2.64	5.19	.1318	5.89	4.63	620
7	1/65 - 12/74	17	90.0	-.71	3.93	.2216	3.89	3.57	620
7	1/65 - 12/74	18	90.0	-3.43	3.29	.2395	2.26	2.78	620
7	1/65 - 12/74	19	90.0	-5.61	2.71	.1653	1.43	2.13	620
7	1/65 - 12/74	20	90.0	-7.34	2.49	.1557	.65	1.99	620
7	1/65 - 12/74	21	90.0	-9.10	2.49	.0821	.44	1.99	620
7	1/65 - 12/74	22	90.0	-10.66	2.43	.0760	.10	1.99	620
7	1/65 - 12/74	23	90.0	-11.96	2.54	.0085	-.12	2.00	620
7	1/65 - 12/74	24	90.0	-13.25	2.61	.0240	-.17	2.12	620
7	1/65 - 12/74	25	90.0	-14.36	2.76	.0014	.06	2.09	620
7	1/65 - 12/74	26	90.0	-15.11	2.88	.0669	.25	2.11	620
7	1/65 - 12/74	27	90.0	-15.58	3.03	.0456	.15	2.17	620

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	2.00	2.07	-0.5690	-1.51	1.85	620										
12	2.01	2.06	-0.4506	-1.51	1.84	0.152	0.152	-0.5784	-0.2217	-0.2245	2.00	2.00	1.84	-0.5394	-1.51	1.77
24	2.00	2.07	-0.6244	-1.49	1.82	0.981	0.981	-0.5895	-0.5255	-0.4643	2.01	2.01	1.60	-0.3373	-1.52	1.51
36	2.02	2.09	-0.4736	-1.49	1.80	-0.1123	-0.1123	-0.6004	-0.2556	-0.2815	2.01	2.01	1.82	-0.5266	-1.52	1.78
48	2.01	2.09	-0.5907	-1.47	1.79	0.3994	0.3994	-0.5970	-0.4320	-0.3882	2.01	2.01	1.67	-0.4294	-1.52	1.63
60	1.98	2.06	-0.4747	-1.47	1.80	-0.1490	-0.1490	-0.5972	-0.3279	-0.2762	1.99	1.99	1.82	-0.4974	-1.51	1.74
72	1.98	2.07	-0.5611	-1.47	1.80	0.3192	0.3192	-0.5984	-0.3810	-0.3703	2.02	2.02	1.71	-0.4618	-1.53	1.69

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
2.01	-1.50

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	.46	2.60	-0.2910	-2.02	3.99	620										
12	.47	2.59	-0.1667	-1.98	4.00	0.7052	0.7052	-0.3006	-0.2843	-0.3568	.49	.49	2.42	-0.0547	-2.10	2.82
24	.48	2.60	-0.4885	-1.96	3.99	0.5241	0.5241	-0.3099	-0.0889	-0.2452	.49	.49	2.25	-0.2663	-2.08	3.38
36	.44	2.60	-0.0701	-1.92	4.01	0.2844	0.2844	-0.3093	-0.0556	-0.2709	.48	.48	2.46	-0.2748	-2.07	3.82
48	.45	2.60	-0.1854	-1.88	4.02	0.1314	0.1314	-0.3187	0.0844	-0.1309	.48	.48	2.54	-0.3055	-2.04	3.92
60	.43	2.60	-0.1929	-1.88	4.04	-0.0012	-0.0012	-0.3265	0.0168	-0.1591	.46	.46	2.47	-0.3010	-2.02	3.99
72	.44	2.62	-0.0442	-1.86	4.06	-0.0413	-0.0413	-0.3338	0.1372	-0.0074	.46	.46	2.59	-0.3003	-2.00	3.95

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
.53	-2.08

ALTITUDE (KM) - 2

ALTITUDE (KM) - 3

2

166

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	1.77	4.55	-0.1722	2.16	4.34		2.16		620					
12	1.79	4.56	.7676	2.16	4.38		.7223	-0.1696		1.73	2.87	-0.0243	2.16	3.00
24	1.79	4.57	.6260	2.14	4.41		.5241	-0.1682		1.73	3.47	-0.0828	2.17	3.69
36	1.77	4.58	.4620	2.14	4.42		.3397	-0.1689		1.75	3.98	-0.1178	2.17	4.08
48	1.78	4.59	.3756	2.13	4.43		.2518	-0.1710		1.75	4.20	-0.1484	2.17	4.20
60	1.78	4.62	.2720	2.12	4.44		.1835	-0.1633		1.76	4.37	-0.1573	2.17	4.27
72	1.80	4.65	.2201	2.12	4.47		.1519	-0.1726		1.76	4.43	-0.1635	2.17	4.29

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
1.73	2.16

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ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	2.50	5.41	-0.1032	2.47	4.76		2.47		620					
12	2.53	5.42	.8013	2.43	4.80		.7057	-0.1027		2.42	3.18	-0.0131	2.45	3.36
24	2.55	5.43	.6898	2.40	4.84		.4776	-0.1058		2.42	3.94	-0.0560	2.47	4.17
36	2.52	5.44	.5445	2.36	4.86		.2999	-0.1048		2.44	4.45	-0.0720	2.48	4.54
48	2.52	5.46	.4543	2.32	4.87		.2279	-0.1022		2.45	4.78	-0.0793	2.49	4.63
60	2.52	5.50	.3522	2.30	4.90		.1460	-0.0992		2.46	5.05	-0.0817	2.49	4.71
72	2.52	5.56	.2728	2.31	4.95		.1185	-0.0975		2.47	5.19	-0.0860	2.49	4.72

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
2.42	2.40

ALTITUDE (KM) - 6

BI- AND MULTIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

OT HR	MEAN X _P	S.D. X _P	R (X,X _P)	MEAN Y _P	S.D. Y _P	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN				S.D. Y _P
										X	Y	R	(X _P ,Y _P)	
12	3.75	6.20	.8028	2.73	5.60		.7280	-.0532	.0695	620	3.63	2.72	3.76	
24	3.78	6.21	.7012	2.66	5.63		.4858	-.0538	.1174		3.55	2.77	4.79	
36	3.81	6.20	.5907	2.59	5.64		.3453	-.0493	.1221		4.88	2.79	5.16	
48	3.81	6.23	.4912	2.54	5.65		.2692	-.0464	.1061		5.31	2.80	5.31	
60	3.85	6.26	.3979	2.50	5.69		.1961	-.0437	.0921		5.63	2.81	5.42	
72	3.85	6.30	.3118	2.52	5.76		.1706	-.0378	.0659		5.84	2.81	5.45	

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (X,Y)	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
5.07	6.80	.0147	3.34	6.43	620	4.77	3.19								
12	6.82	3.27	.7127	.0191	.1503	3.95	-.0576	3.25	4.42						
36	6.82	3.15	.4957	.0160	.1694	4.82	-.0231	3.30	5.49						
24	6.79	3.09	.3939	.0215	.1784	5.55	-.0200	3.31	5.81						
48	6.85	3.01	.3083	.0243	.1623	5.27	-.0126	3.33	6.03						
60	6.88	2.94	.2308	.0274	.1532	5.98	-.0034	3.33	6.18						
72	6.95	2.98	.1874	.0364	.1549	6.47	.0026	3.32	6.24						

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	24	6.68	7.45	.8020	3.90	7.33	1206	6.21	4.35	-.0191	3.98	4.87	6.21	4.35	-.0191	3.98	4.87
36	48	6.74	7.47	.6761	3.80	7.34	.1404	6.21	5.33	-.0086	4.00	6.08	6.22	6.11	-.0071	4.00	6.47
60	72	6.84	7.48	.5379	3.71	7.37	.1601	6.25	6.11	-.0071	4.00	6.47	6.25	6.59	-.0142	3.99	6.72
		6.90	7.57	.4283	3.62	7.40	.1685	6.28	6.86	-.0023	4.01	6.93	6.28	6.86	-.0023	4.01	6.93
		6.94	7.61	.3347	3.50	7.47	.1455	6.34	7.03	.0002	3.98	7.06	6.34	7.03	.0002	3.98	7.06
		7.68	7.68	.2681	3.51	7.47	.1422	6.34	7.03	.0002	3.98	7.06	6.34	7.03	.0002	3.98	7.06

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
6.18	3.97

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	24	8.39	8.26	.8159	4.85	7.95	.0525	7.72	4.63	.0024	5.08	5.27	7.72	4.63	.0024	5.08	5.27
36	48	8.49	8.32	.6537	4.75	7.95	.0931	7.74	5.99	-.0437	5.05	6.65	7.74	5.99	-.0437	5.05	6.65
60	72	8.63	8.38	.5199	4.64	7.97	.1082	7.76	6.87	-.0454	5.03	7.11	7.76	6.87	-.0454	5.03	7.11
		8.71	8.49	.4087	4.55	7.99	.1229	7.81	7.38	-.0554	5.01	7.33	7.81	7.38	-.0554	5.01	7.33
		8.78	8.54	.3230	4.43	8.02	.1184	7.85	7.64	-.0509	4.96	7.57	7.85	7.64	-.0509	4.96	7.57
		8.81	8.62	.2510	4.42	8.08	.1159	7.90	7.81	-.0509	4.96	7.71	7.90	7.81	-.0509	4.96	7.71

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
7.74	5.08

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ALTITUDE (KPH) - 11

170

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. Y	N	MEAN Y	S.D. Y	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	12.27	9.68	.8358	8.13	9.10	.8213	.0184	9.09	620	8.32	9.09	.0249	-.0551	11.26	5.27	.1348	8.53	5.18
24	12.43	9.71	.6674	7.93	9.05	.6512	.0342			7.80		.0369	-.1129	11.33	7.09	.1217	8.61	6.90
36	12.55	9.74	.5226	7.80	9.04	.5309	.0482			7.70		.0420	-.1625	11.37	8.05	.1149	8.62	7.70
48	12.72	9.80	.3872	7.70	9.00	.4462	.0694			7.56		.0576	-.1678	11.46	8.72	.0837	8.59	8.13
60	13.03	9.86	.2949	7.56	8.98	.3784	.0751			7.41		.0646	-.1768	11.55	9.04	.0691	8.58	8.41
72	13.11	9.90	.2374	7.41	9.01	.2859	.0906					.0588	-.1735	11.60	9.21	.0496	8.55	8.70

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
11.25	8.40

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	S.D. Y	N	MEAN Y	S.D. Y	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	12.07	9.16	-.0067	8.58	8.67	8.58	.0083	8.67	620	8.58	8.67	.0170	-.0587	10.29	5.03	.1081	8.76	4.88
24	12.21	9.16	.8331	8.39	8.69	.8267	.0328			8.21		.0328	-.1065	10.44	6.52	.1114	8.85	6.37
36	12.36	9.17	.6904	8.21	8.60	.6786	.0438			8.07		.0438	-.1595	10.58	7.45	.1211	8.89	7.10
48	12.55	9.20	.5532	8.07	8.59	.5741	.0578			7.98		.0578	-.1830	10.70	8.00	.1104	8.91	7.55
60	12.77	9.14	.4405	7.98	8.55	.4918	.0637			7.85		.0637	-.1866	10.86	8.35	.0902	8.94	7.88
72	12.86	9.11	.3549	7.85	8.54	.4176	.0799			7.73		.0799	-.1697	10.96	8.54	.0607	8.91	8.16

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
10.09	8.64

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (192214) - VARDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	MEAN YP	S.D. YP	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
OT	10.59	7.79	7.53	7.65	7.68	7.66	620		9.84	7.77			
HR													
12	10.72	7.77	7.53	7.65	.8251	.0607			9.84	4.49	.1213	7.85	4.32
24	10.84	7.76	7.37	7.56	.6720	.0457			9.82	5.54	.1658	7.95	5.68
36	10.98	7.74	7.26	7.54	.5379	.0228			9.81	6.22	.1694	7.98	6.46
48	11.19	7.72	7.16	7.55	.4597	.0165			9.79	6.67	.1433	7.99	6.80
60	11.30	7.68	7.03	7.53	.3849	.0088			9.83	6.95	.1161	7.98	7.07
72	11.39	7.70	6.97	7.58	.3255	.0046			9.85	7.14	.0951	7.98	7.24

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	MEAN YP	S.D. YP	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
OT	7.79	6.40	6.27	6.05	6.27	6.05	620		7.41	6.40			
HR													
12	7.92	6.39	6.17	6.06	.7820	.0393			7.38	4.13	.0587	6.43	3.72
24	8.02	6.43	6.05	6.02	.6912	.0510			7.31	4.49	.1241	6.49	4.31
36	8.16	6.42	5.96	6.02	.5334	.0544			7.31	5.28	.0989	6.49	5.12
48	8.31	6.41	5.87	6.02	.4568	.0539			7.22	5.35	.1010	6.51	5.38
60	8.42	6.36	5.77	6.03	.3611	.0520			7.27	5.79	.0847	6.50	5.65
72	8.52	6.35	5.69	6.04	.3193	.0423			7.25	5.65	.0797	6.51	5.74

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VALDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X ₂	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	4.30	4.40	5.36	.7314	4.40	4.63	.5970	-.0024	.1025	.0081	3.87	3.65	3.87	3.65	-.1609	4.58	3.68
24	4.40	4.32	5.39	.7142	4.32	4.63	.6645	-.0123	.0679	-.0922	3.78	3.71	3.78	3.71	.0011	4.65	3.44
36	4.51	4.25	5.35	.5816	4.25	4.61	.3877	-.0050	.0991	-.0015	3.81	4.35	3.81	4.35	-.0857	4.57	4.23
48	4.82	4.20	5.36	.5805	4.20	4.64	.4381	-.0132	.0274	-.0847	3.70	4.33	3.70	4.33	.0136	4.64	4.15
60	4.71	4.15	5.36	.4704	4.15	4.66	.2527	-.0318	.0614	-.0249	3.77	4.72	3.77	4.72	-.0385	4.56	4.45
72	4.79	4.06	5.37	.4690	4.06	4.70	.3395	-.0552	.0109	-.1076	3.69	4.70	3.69	4.70	.0197	4.64	4.35

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X ₂	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.43	.34	4.34	.6796	2.83	3.60	.4439	.0943	.1020	.0831	.17	3.19	.17	3.19	.0236	2.98	3.22
24	.53	.34	4.37	.7034	2.90	3.62	.6123	.0755	.1353	.0041	.08	3.08	.08	3.08	.0495	3.05	2.83
36	.60	.34	4.34	.5722	2.74	3.62	.2933	.0824	.0328	.0454	.09	3.56	.09	3.56	.0955	3.01	3.45
48	.73	.34	4.34	.5622	2.64	3.64	.4395	.0600	.0882	-.0033	.01	3.59	.01	3.59	.0806	3.05	3.23
60	.80	.31	4.31	.4813	2.64	3.59	.1821	.0462	.0315	.0497	.05	3.80	.05	3.80	.0850	2.98	3.54
72	.88	.30	4.30	.4410	2.53	3.65	.3410	.0170	.0509	.0037	.02	3.90	.02	3.90	.0866	3.05	3.39

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VAUGHNBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	MEAN XP	S.D. X	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		-2.68		3.59		.0720	1.69	2.79				620					
12		-2.60	-2.62	.5968		1.65	2.78		.3517								
24		-2.53	3.62	.6492		1.62	2.78		.5581								
36		-2.48	3.62	.5198		1.56	2.78		.2955								
48		-2.40	3.60	.5199		1.53	2.80		.3615								
60		-2.34	3.60	.4605		1.48	2.79		.2047								
72		-2.26	3.57	.3919		1.44	2.83		.2363								

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
-2.81	1.82

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	MEAN XP	S.D. X	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		-5.02		3.18		.0069	1.05	2.25				620					
12		-4.95	3.17	.5058		1.01	2.25		.1952								
24		-4.88	3.16	.6492		.98	2.26		.3706								
36		-4.83	3.16	.4636		.94	2.26		.2778								
48		-4.74	3.10	.5129		.90	2.27		.1634								
60		-4.65	3.12	.3989		.88	2.26		.2128								
72		-4.58	3.11	.4353		.83	2.29		.1271								

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
-5.18	1.12

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1921-4) - VAN DER BERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/85 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HP	MEAN X	S.D. X	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	P (YP, X)
12	2	-5.36	2.82	.5071	.5	2.15	.1633	.1633	2.15	620	-7.11	2.43	.0027	-7.11	2.43	620	-7.11	2.43	.0027
24	2	-5.23	2.81	.5434	.5	2.15	.2393	.2393	2.15	620	-7.18	2.34	-.0343	-7.18	2.34	620	-7.18	2.34	-.0343
36	2	-5.22	2.84	.5223	.5	2.15	.2043	.2043	2.15	620	-7.18	2.47	.0017	-7.18	2.47	620	-7.18	2.47	.0017
48	2	-5.15	2.82	.4943	.5	2.15	.1690	.1690	2.15	620	-7.12	2.45	-.0487	-7.12	2.45	620	-7.12	2.45	-.0487
60	2	-5.13	2.86	.3937	.5	2.15	.1667	.1667	2.15	620	-7.21	2.58	-.0279	-7.21	2.58	620	-7.21	2.58	-.0279
72	2	-5.53	2.90	.4359	.5	2.15	.1661	.1661	2.15	620	-7.26	2.54	-.0253	-7.26	2.54	620	-7.26	2.54	-.0253

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ALTITUDE (KM) - 21

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HP	MEAN X	S.D. X	P (X, Y)	MEAN YP	S.D. YP	P (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	P (YP, X)
12	2	-8.43	2.77	.4515	.36	1.93	.1093	.1093	1.93	620	-8.55	2.46	.0470	-8.55	2.46	620	-8.55	2.46	.0470
24	2	-8.37	2.81	.5459	.36	1.94	.2045	.2045	1.94	620	-8.51	2.29	.0351	-8.51	2.29	620	-8.51	2.29	.0351
36	2	-8.30	2.83	.4847	.36	1.94	.1768	.1768	1.94	620	-8.62	2.42	.0392	-8.62	2.42	620	-8.62	2.42	.0392
48	2	-8.22	2.86	.5555	.36	1.92	.1045	.1045	1.92	620	-8.66	2.44	.0590	-8.66	2.44	620	-8.66	2.44	.0590
60	2	-8.11	2.94	.4849	.36	1.93	.1036	.1036	1.93	620	-8.66	2.54	.0392	-8.66	2.54	620	-8.66	2.54	.0392
72	2	-8.06	2.86	.4384	.36	1.95	.1503	.1503	1.95	620	-8.69	2.54	.0491	-8.69	2.54	620	-8.69	2.54	.0491

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1922/14) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 30.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-10.12	2.91	.4839	.02	1.91	.0522	-.0443	-.0999	-.0132	-10.25	2.51	.0115	.04	-10.22	1.90	-10.25	2.51	.0115	.04	1.82
24	-10.26	2.95	.5541	.01	1.90	.1255	-.0444	-.0022	-.1103	-10.30	2.37	-.0284	.04	-10.32	1.89	-10.30	2.37	-.0284	.04	1.89
36	-9.28	2.93	.4523	.01	1.92	.0110	-.0635	-.1201	-.0312	-10.32	2.56	-.0192	.05	-10.32	1.90	-10.32	2.56	-.0192	.05	1.89
48	-9.93	2.95	.4622	-.02	1.92	.0107	-.0813	-.0537	-.0650	-10.36	2.54	-.0144	.05	-10.36	1.90	-10.36	2.54	-.0144	.05	1.90
60	-9.73	2.83	.3943	-.03	1.91	.0335	-.0759	-.0443	-.0242	-10.38	2.64	-.0221	.05	-10.38	1.90	-10.38	2.64	-.0221	.05	1.90
72	-9.73	2.92	.3544	-.04	1.92	.0053	-.0757	-.0423	-.0634	-10.39	2.68	-.0243	.05	-10.39	1.90	-10.39	2.68	-.0243	.05	1.90

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
-10.22	.05

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-11.53	2.92	.5115	.02	1.84	-.0839	-.0647	-.0998	.0378	-11.62	2.47	-.0155	.04	-11.62	1.82	-11.62	2.47	-.0155	.04	1.82
24	-11.48	2.92	.5483	.01	1.82	.1412	-.0651	-.0771	-.1320	-11.64	2.40	-.0185	.05	-11.64	1.82	-11.64	2.40	-.0185	.05	1.82
36	-11.41	2.91	.4933	.01	1.82	-.0221	-.0534	-.0472	.0266	-11.66	2.56	-.0245	.04	-11.66	1.84	-11.66	2.56	-.0245	.04	1.84
48	-11.34	2.92	.4444	.01	1.81	.0353	-.0635	-.0894	-.1046	-11.71	2.59	-.0252	.05	-11.71	1.84	-11.71	2.59	-.0252	.05	1.84
60	-11.22	2.86	.4333	-.01	1.81	-.0105	-.0463	-.0214	-.0731	-11.75	2.63	-.0353	.05	-11.75	1.84	-11.75	2.63	-.0353	.05	1.84
72	-11.14	2.89	.4061	-.01	1.82	.0828	-.0496	-.0277	-.0825	-11.78	2.63	-.0593	.05	-11.78	1.84	-11.78	2.63	-.0593	.05	1.84

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
-11.51	.05

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1932-4) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	MEAN YP	S.D. X	P (X, YP)	MEAN YP	S.D. YP	P (X, Y)	MEAN Y	S.D. Y	N	CONVOLUTIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	-12.56	2.93	2.90	-.1701	.08	2.00	620				
24	-12.50	2.93	2.90	-.1701	.08	2.00	620				
36	-12.42	2.95	2.90	-.1701	.08	2.00	620				
48	-12.33	2.97	2.90	-.1701	.08	2.00	620				
60	-12.23	2.94	2.90	-.1701	.08	2.00	620				
72	-12.14	2.97	2.90	-.1701	.08	2.00	620				

ALTITUDE (M) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	MEAN YP	S.D. X	P (X, YP)	MEAN YP	S.D. YP	P (X, Y)	MEAN Y	S.D. Y	N	CONVOLUTIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	-13.81	2.92	2.90	-.1474	.00	2.00	620				
24	-13.74	2.96	2.90	-.1474	.00	2.00	620				
36	-13.66	2.97	2.90	-.1474	.00	2.00	620				
48	-13.58	2.99	2.90	-.1474	.00	2.00	620				
60	-13.48	3.01	2.90	-.1474	.00	2.00	620				
72	-13.36	3.00	2.90	-.1474	.00	2.00	620				

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
1/55	12/74	1	90.0	2.00	2.07	-.5930	-1.51	1.85	620
1/55	12/74	2	90.0	2.46	2.60	-.5910	-2.02	3.99	620
1/55	12/74	3	90.0	.02	3.15	-.2870	-.34	4.19	620
1/55	12/74	4	90.0	1.15	3.87	-.2645	1.23	4.30	620
1/55	12/74	5	90.0	1.77	4.55	-.1722	2.16	4.34	620
1/55	12/74	6	90.0	2.50	5.41	-.1032	2.47	4.76	620
1/55	12/74	7	90.0	3.71	6.19	-.0499	2.80	5.56	620
1/55	12/74	8	90.0	5.07	6.80	-.0147	3.34	6.43	620
1/55	12/74	9	90.0	6.62	7.42	-.0032	3.99	7.27	620
1/55	12/74	10	90.0	8.28	8.20	-.0005	4.66	7.89	620
1/55	12/74	11	90.0	9.82	8.95	-.0142	5.16	8.36	620
1/55	12/74	12	90.0	11.32	9.56	-.0043	7.40	8.97	620
1/55	12/74	13	90.0	12.27	9.69	-.0040	8.32	9.09	620
1/55	12/74	14	90.0	12.57	9.15	-.0067	8.58	8.67	620
1/55	12/74	15	90.0	13.53	7.79	-.0147	7.68	7.66	620
1/55	12/74	16	90.0	7.73	6.40	-.0235	6.27	6.05	620
1/55	12/74	17	90.0	4.15	5.35	-.0359	4.48	4.62	620
1/55	12/74	18	90.0	3.47	4.54	-.0331	2.92	3.61	620
1/55	12/74	19	90.0	2.03	3.59	-.0720	1.69	2.79	620
1/55	12/74	20	90.0	3.02	3.18	-.0339	1.05	2.25	620
1/55	12/74	21	90.0	7.02	2.82	-.0337	1.05	2.15	620
1/55	12/74	22	90.0	8.50	2.67	-.0120	.36	1.93	620
1/55	12/74	23	90.0	-10.21	2.57	-.0378	.04	1.90	620
1/55	12/74	24	90.0	-1.58	2.00	-.0706	.04	1.64	620
1/55	12/74	25	90.0	-3.61	2.35	-.1731	.08	2.00	620
1/55	12/74	26	90.0	-3.81	2.32	-.1474	-.00	2.00	620
1/55	12/74	27	90.0	-14.57	2.93	-.0862	-.06	1.95	620
1/55	12/74	28	90.0	-15.14	3.18	-.0372	-.02	2.17	620

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	1.71	2.19	-.5912	-1.45	2.17	600						1.72	-1.38
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)					
12	1.70	2.21	-.5453	-1.45	2.21	-.0853	-.5954	.3007	.3217	1.70	1.84	-.5379	-1.43
24	1.68	2.23	-.6930	-1.45	2.22	.4471	-.5951	-.4554	-.4975	1.73	1.56	-.4102	-1.44
36	1.68	2.23	-.5731	-1.45	2.23	.1797	-.5934	-.3707	-.3450	1.69	1.80	-.4988	-1.43
48	1.67	2.24	-.6315	-1.45	2.23	.3355	-.5951	-.3700	-.4082	1.74	1.70	-.4950	-1.45
60	1.68	2.24	-.5204	-1.44	2.24	-.2506	-.5939	.4032	.3816	1.69	1.77	-.4780	-1.43
72	1.66	2.25	-.5256	-1.45	2.24	.2430	-.5893	-.3318	-.3801	1.74	1.78	-.5175	-1.46

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF Y,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	-.32	2.90	-.3485	-1.54	4.35	600						-.42	-1.33
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)					
12	-.34	2.90	.2700	-1.57	4.37	.6312	-.3538	-.2565	-.160	-.39	2.58	-.0997	-1.39
24	-.34	2.91	.2947	-1.56	4.41	.4326	-.3462	-.0450	-.2910	-.37	2.70	-.2920	-1.45
36	-.35	2.92	-.0466	-1.59	4.41	.1980	-.3408	-.0107	-.3076	-.37	2.72	-.3028	-1.43
48	-.34	2.93	.1155	-1.60	4.40	.1001	-.3389	.0984	-.1533	-.35	2.85	-.3328	-1.52
60	-.33	2.93	-.1047	-1.62	4.39	-.0289	-.3362	.0683	-.0982	-.34	2.85	-.3485	-1.55
72	-.32	2.92	.0217	-1.62	4.37	-.0584	-.3269	.0665	.0273	-.32	2.90	-.3510	-1.57

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL. STATISTICS OF X, 'XP, YP

DT	MEAN X _P	S.D. X _P	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. X _P	R (X _P ,Y)	MEAN X _P	S.D. Y _P
1	-48	4.06	-.3308	-25	5.04	600	-.58	.04				
2	-50	4.07	.6552	.7105	-.3377	1,650	2.94	-.1518	-.58			3.52
3	-53	4.10	.4351	.4997	-.3396	1,355	3.52	-.2551	-.56			4.30
4	-54	4.14	.2302	.2959	-.3403	1,099	3.84	-.3014	-.55			4.73
5	-58	4.17	.0869	.1781	-.3384	1,304	3.98	-.3205	-.53			4.85
6	-58	4.17	-.0411	.0618	-.3341	1,049	4.02	-.3181	-.52			4.93
7	-57	4.18	-.0909	.0083	-.3321	1,520	4.03	-.3195	-.50			4.97

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X.Y.XP.YP

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALTITUDE ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	2.39	6.61	.8008	.42	6.48		.42	6.48	-.1379	.7706	.0189	-.2849	2.55	3.74	-.0085	.81	3.98
24	2.37	6.70	.6115	.41	6.58		.41	6.58	-.1472	.5605	.1376	-.3073	2.49	4.97	-.1331	.76	5.08
36	2.37	6.77	.4208	.38	6.62		.38	6.62	-.1569	.3877	.1978	-.2517	2.45	5.80	-.1546	.70	5.63
48	2.34	6.86	.2922	.31	6.70		.31	6.70	-.1625	.2505	.2121	-.2010	2.43	6.17	-.1618	.65	5.95
60	2.35	6.92	.1645	.20	6.75		.20	6.75	-.1559	.1713	.1931	-.1512	2.40	6.39	-.1399	.62	6.12
72	2.36	6.98	.0956	.12	6.81		.12	6.81	-.1445	.1228	.1634	-.1106	2.38	6.48	-.1291	.59	6.22

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
2.65	.85

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	3.46	7.45	-.0982	.10	7.14	600	.10	7.14	-.1057	.7780	.0425	-.2333	3.91	4.20	-.0465	.52	4.40
24				.12	7.34		.12	7.34	-.1068	.5547	.1455	-.2293	3.83	5.73	-.1517	.43	5.76
36				.12	7.40		.12	7.40	-.1148	.3960	.1999	-.1699	3.77	6.62	-.1742	.37	6.35
48				.13	7.45		.13	7.45	-.1171	.2691	.2291	-.1239	3.74	7.03	-.1667	.32	6.62
60				.03	7.50		.03	7.50	-.1076	.1775	.2226	-.0982	3.70	7.25	-.1405	.29	6.81
72				-.09	7.54		-.09	7.54	-.1024	.1325	.1808	-.0655	3.67	7.37	-.1193	.26	6.94

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
4.02	.56

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	4.75	8.49	.8101	-.25	8.28	.7868	.7868	-.0221	.1151	-.1289	-.1289	5.16	4.82	-.0708	.28	4.92
24	4.73	8.55	.6018	-.18	8.42	.5956	.5956	-.0231	.1773	-.1379	-.1379	5.07	6.60	-.0832	.15	6.37
36	4.71	8.62	.4345	-.16	8.47	.4352	.4352	-.0287	.2233	-.0830	-.0830	5.01	7.51	-.1059	.10	7.08
48	4.71	8.70	.3146	-.16	8.54	.3120	.3120	-.0283	.2619	-.0593	-.0593	4.95	7.93	-.0988	.05	7.44
60	4.70	8.77	.2052	-.28	8.60	.2127	.2127	-.0224	.2526	-.0372	-.0372	4.90	8.18	-.0691	.02	7.70
72	4.70	8.85	.1356	-.41	8.61	.1671	.1671	-.0233	.2113	-.0043	-.0043	4.89	8.29	-.0513	-.01	7.86

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	6.13	9.54	.8176	-.14	9.22	.7742	.7742	.0635	.1625	-.0407	-.0407	6.55	5.34	-.0148	.4	5.68
24	6.12	9.61	.6140	-.05	9.41	.5885	.5885	.0634	.2167	-.0636	-.0636	6.45	7.35	-.0110	.21	7.19
36	6.08	9.66	.4318	-.01	9.49	.4562	.4562	.0536	.2545	-.0403	-.0403	6.38	8.46	-.0190	.21	7.84
48	6.05	9.73	.2925	-.03	9.55	.3314	.3314	.0461	.2819	-.0258	-.0258	6.31	8.98	-.0037	.19	8.25
60	6.04	9.82	.1784	-.16	9.61	.2377	.2377	.0513	.2762	-.0059	-.0059	6.25	9.25	-.0201	.17	8.52
72	6.02	9.89	.1057	-.33	9.60	.1896	.1896	.0501	.2224	-.0359	-.0359	6.23	9.34	-.0399	.13	8.74

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
		7.71	10.45	.1619	-.13	10.32	600						8.41	.53					
12		7.72	10.60	.8149	-.10	10.46		-.10	10.46	.7543		8.22	5.99	.1047	8.22	5.99	.1047	.40	6.69
24		7.72	10.62	.6050	.01	10.73		.01	10.73	.5697		8.08	8.28	.0797	8.08	8.28	.0797	.26	8.31
36		7.66	10.69	.4234	.11	10.86		.11	10.86	.4383		8.00	9.46	.0782	8.00	9.46	.0782	.19	9.02
48		7.60	10.73	.2787	.05	10.93		.05	10.93	.3253		7.92	10.04	.0974	7.92	10.04	.0974	.18	9.47
60		7.56	10.81	.1661	-.05	10.97		-.05	10.97	.2519		7.86	10.30	.1183	7.86	10.30	.1183	.18	9.70
72		7.53	10.86	.1024	-.22	10.95		-.22	10.95	.1904		7.83	10.37	.1341	7.83	10.37	.1341	.15	9.93

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
		9.35	11.66	.2510	.27	11.45	600						10.26	.89					
12		9.31	11.82	.8115	.29	11.59		.29	11.59	.7656		10.08	6.76	.1607	10.08	6.76	.1607	.81	7.26
24		9.27	11.88	.5950	.37	11.87		.37	11.87	.5815		9.91	9.33	.1623	9.91	9.33	.1623	.69	9.12
36		9.20	11.69	.4221	.47	12.04		.47	12.04	.4573		9.78	10.56	.1723	9.78	10.56	.1723	.63	9.95
48		9.13	11.91	.2774	.37	12.11		.37	12.11	.3390		9.66	11.20	.1916	9.66	11.20	.1916	.64	10.50
60		9.06	12.06	.1575	.23	12.18		.23	12.18	.2641		9.54	11.51	.2189	9.54	11.51	.2189	.63	10.80
72		8.93	12.10	.0952	.07	12.19		.07	12.19	.2059		9.50	11.59	.2310	9.50	11.59	.2310	.60	11.03

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (191214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (MM) - 10

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	11.37	12.02	.3247	.65	12.25	600						12.35	1.32					
24	11.31	13.01	.2089	.7857	.3295	.3533	.57	12.40	.3295	.7857	.3295	7.53	.1810	12.19	7.53	.1810	1.27	7.48
36	11.25	13.04	.6023	.5976	.3331	.3428	.74	12.36	.3331	.5976	.3331	10.22	.2247	12.01	10.22	.2247	1.15	9.64
48	11.16	13.07	.4267	.4768	.3252	.3199	.81	12.79	.3252	.4768	.3252	11.60	.2472	11.87	11.60	.2472	1.10	10.55
60	11.04	13.07	.2793	.3608	.3237	.2884	.68	12.88	.3237	.3608	.2884	12.31	.2736	11.74	12.31	.2736	1.11	11.21
72	10.96	13.22	.1702	.2715	.3293	.2590	.43	12.94	.3293	.2715	.2590	12.63	.2969	11.61	12.63	.2969	1.10	11.58
	10.86	13.26	.0343	.2177	.3367	.2104	.25	12.93	.3367	.2177	.2104	12.74	.3082	11.55	12.74	.3082	1.07	11.82

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ALTITUDE (MM) - 11

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	13.63	13.57	.3833	1.29	12.86	500						14.71	1.90					
24	13.60	13.77	.8280	.9029	.3799	.3943	1.27	13.01	.3799	.9029	.3799	7.40	.2082	14.54	7.40	.2082	1.87	7.57
36	13.55	13.81	.6371	.6260	.3806	.3616	1.74	13.22	.3806	.6260	.3616	10.45	.2856	14.35	10.45	.2856	1.76	10.07
48	13.44	13.83	.4578	.4739	.3735	.3276	1.15	13.30	.3735	.4739	.3276	12.06	.3110	14.20	12.06	.3110	1.72	11.13
60	13.33	13.66	.3191	.3631	.3746	.2381	1.23	13.37	.3746	.3631	.2381	12.86	.3279	14.06	12.86	.3279	1.72	11.77
72	13.24	13.34	.2153	.2699	.3755	.2676	1.05	13.41	.3755	.2699	.2676	13.25	.3478	13.95	13.25	.3478	1.72	12.17
	13.19	13.98	.1511	.2028	.3760	.2271	.60	13.38	.3760	.2028	.2271	13.40	.3583	13.88	13.40	.3583	1.68	12.42

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1932/4) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	15.50	13.28	.3721	2.03	12.38	600				16.50	2.64					
12	15.47	13.40	.2491	2.05	12.52	.8276	.3685	.3734	.15	16.36	2.57	6.89	7.01	.2184	2.45	9.47
24	15.46	13.47	.6644	2.10	12.69	.6340	.3699	.3409	.2283	16.18	2.42	10.64	9.92	.2728	2.45	9.47
36	15.35	13.51	.5014	2.09	12.74	.4889	.3684	.3185	.1683	16.06	2.44	11.29	11.47	.2951	2.44	11.29
48	15.25	13.56	.3873	1.92	12.76	.3780	.3703	.2894	.1340	15.97	2.44	11.68	12.24	.3129	2.44	11.68
60	15.20	13.67	.2919	1.72	12.80	.2827	.3701	.2653	.1093	15.87	2.41	11.91	12.70	.3260	2.41	11.91
72	15.16	13.70	.2194	1.51	12.83	.2244	.3697	.2264	.1114	15.81	2.41	11.91	12.95	.3384	2.41	11.91

ALTITUDE (KM) - 13

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	16.15	12.30	.3442	2.50	11.26	600				17.18	3.07					
12	16.17	12.39	.2514	2.55	11.24	.8434	.3412	.3576	.2687	17.01	2.99	5.99	6.38	.2074	2.99	5.99
24	16.14	12.44	.6987	2.58	11.44	.6774	.3404	.3374	.2009	16.86	2.92	8.19	8.79	.2542	2.92	8.19
36	16.06	12.53	.5583	2.58	11.44	.5292	.3393	.3254	.1260	16.75	2.89	9.40	10.17	.2792	2.89	9.40
48	15.96	12.62	.4568	2.41	11.44	.4068	.3371	.3032	.0816	16.67	2.93	10.10	10.90	.2903	2.93	10.10
60	15.91	12.68	.3670	2.23	11.48	.2945	.3357	.2802	.0635	16.57	2.91	10.54	11.41	.2935	2.91	10.54
72	15.83	12.74	.2877	2.02	11.47	.2229	.3359	.2431	.0729	16.50	2.82	10.79	11.77	.3031	2.82	10.79

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR X AND YP
	15.02	10.01	.2902	2.24	9.51				600	GIVEN X GIVEN Y 15.85 2.71
12	15.04	10.15	.8557	2.26	9.59					
24	15.10	10.23	.7200	2.29	9.67					
36	15.10	10.32	.6054	2.27	9.71					
48	15.02	10.40	.4948	2.17	9.73					
60	15.00	10.46	.3910	2.03	9.79					
72	14.99	10.54	.3020	1.83	9.78					
										MEAN XP S.D. XP R (XP,YP) MEAN YP S.D. YP
										15.70 5.15 .1500 2.68 4.88 15.54 6.93 .1553 2.61 6.86 15.44 7.93 .2031 2.58 7.79 15.39 8.66 .2148 2.59 8.45 15.32 9.20 .2315 2.56 8.88 15.26 9.54 .2421 2.53 9.10

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
	12.28	8.22	.2518	.59	7.81				600	GIVEN X GIVEN Y 12.88 1.98
12	12.32	8.31	.8335	1.59	7.87					
24	12.34	8.36	.7083	1.59	7.91					
36	12.38	8.41	.5845	1.60	7.95					
48	12.36	8.49	.4768	1.54	8.00					
60	12.38	8.57	.3511	1.43	8.08					
72	12.37	8.63	.2670	1.36	8.09					
										MEAN XP S.D. XP R (XP,YP) MEAN YP S.D. YP
										12.72 4.51 .1173 1.96 3.99 12.62 5.74 .1488 1.94 5.41 12.52 6.58 .1795 1.87 6.43 12.47 7.15 .1868 1.84 6.96 12.40 7.67 .2031 1.81 7.30 12.40 7.92 .2082 1.78 7.47

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QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (1932/4) - VANZEMERS
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0
 $\hat{X} = U(AT)$
 $Y = V(AT)$
 $XP = U(AT) + DT$
 $YP = V(AT) + DT$

ALTITUDE (M) - 16

QUADRIVARIATE NORMAL STATISTICS OF X.Y.XP.YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR x_p AND y_p

OT	MEAN X _P	S.D. X _P	MEAN Y _P	P X _P Y _P	S.D. Y	N	R (Y _P X _P)	R (Y _P Y)	R (Y _P X)	MEAN X _P	S.D. X _P	R (X _P Y _P)	MEAN Y _P	S.D. Y _P	GIVEN X	GIVEN Y	S.D. Y _P
12	8.97	7.19	1.00	5.04	5.02	500	.2315	.3182	.1275	9.28	3.95	.2315	9.28	3.95	9.42	1.34	3.95
12	8.99	7.23	.99	5.03	5.02		.2249	.3200	.1275	9.19	4.74	.2249	9.19	4.74			4.74
25	9.05	7.27	.98	5.03	5.02		.2349	.3249	.1265	9.09	5.72	.2349	9.09	5.72			5.72
43	9.03	7.23	.98	5.02	5.02		.2304	.2930	.1182	9.04	6.11	.2304	9.04	6.11			6.11
50	9.12	7.35	.98	5.02	5.02		.2304	.2752	.1055	9.03	6.57	.2304	9.03	6.57			6.57
72	9.17	7.41	.97	5.03	5.02		.2294	.2332	.1057	8.98	6.76	.2294	8.98	6.76			6.76

188

ALTITUDE (KM) - 17

ADVANCED STATISTICS OF X.Y.Z. YZ

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR YP AND YP

D.F.	MEAN X _P	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	P (Y,P)	P (X,P)	MEAN Y _P	S.D. Y _P	MEAN X _P	S.D. X _P	GIVEN X	GIVEN Y	S.D. Y _P
12	5.27	5.75	.1856	.25	4.61	600	.0633	.2457	5.42	3.49	.0322	3.35			3.35
24	5.35	5.37		.25			.0159	.3053	5.32	3.25	.0615	3.41			3.41
36	5.43	5.20		.25			.0179	.3072	5.23	4.55	.0415	3.40			3.40
48	5.50	5.23		.25			.0465	.2821	5.13	4.86	.0355	3.32			3.32
60	5.56	5.25		.25			.0173	.2821	5.17	5.18	.0333	3.28			3.28
72	5.64	5.27		.25			.0173	.2812	5.14	5.35	.1139	3.27			3.27

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	2.12	4.33	.7753	-.27	3.47	.6533	-.23	3.47	600	2.32	-.11	2.18	3.07	.1072	-.12	2.59
24	2.22	4.25	.7593	-.26	3.49	.5324						2.09	3.15	.0335	-.13	2.75
36	2.31	4.27	.6180	-.24	3.51	.4057						2.03	3.81	.0642	-.18	3.15
48	2.33	5.02	.5428	-.25	3.54	.2975						1.93	4.25	.0412	-.20	3.27
60	2.47	5.05	.4540	-.27	3.58	.1783						1.95	4.34	.0615	-.22	3.38
72	2.56	5.08	.3885	-.26	3.61	.1113						1.95	4.50	.0510	-.24	3.40

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR YP AND YP

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.02	4.27	.7829	-.45	2.85	.5518	-.41	2.82	600	.08	-.30	-.04	2.70	.0826	-.33	2.35
24	.07	4.28	.7495	-.47	2.88	.5028						-.13	2.77	.0069	-.33	2.39
36	.17	4.29	.6478	-.43	2.90	.2996						-.18	3.21	.0672	-.36	2.67
48	.26	4.32	.5824	-.50	2.93	.1843						-.22	3.41	.0323	-.40	2.74
60	.30	4.33	.5128	-.52	2.94	.0754						-.22	3.63	.0859	-.41	2.80
72	.40	4.35	.4421	-.50	2.96	.0321						-.24	3.79	.1007	-.42	2.81

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANCEBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. Y	R (X,Y)	MEAN YP	S.D. YP	P (Y,YP)	R (XP,Y)	P (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-1.68	3.92	.0757	-1.49	2.37	600						-1.63	-.42		
24															
36															
48															
60															
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	P (YP,X)	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-1.51	3.33	.6290	-.50	2.40	.4058	.0632	-1.68	2.83	.0053	-.46	2.17
24	-1.52	3.32	.5976	-.53	2.44	.3103	.1820	-1.77	2.80	-.0520	-.47	2.22
36	-1.43	3.26	.5112	-.55	2.46	.2932	.0761	-1.80	3.10	.0338	-.46	2.26
48	-1.34	3.23	.5307	-.56	2.47	.0328	.0614	-1.82	3.32	.0426	-.49	2.36
60	-1.23	3.30	.4511	-.53	2.49	.0557	.0677	-1.83	3.48	.0522	-.50	2.36
72	-1.26	3.30	.4856	-.52	2.52	.0121	.0347	-1.83	3.46	.0668	-.50	2.37

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. Y	R (X,Y)	MEAN YP	S.D. YP	P (Y,YP)	R (XP,Y)	P (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-2.86	3.84	.0791	-1.37	2.33	600						-2.89	-.38		
24															
36															
48															
60															
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	P (YP,X)	R (XP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-2.75	3.96	.7037	-.40	2.33	.3017	.0400	-2.95	2.71	.0453	-.37	2.22
24	-2.58	3.25	.6811	-.39	2.35	.2749	.1153	-3.01	2.80	.0191	-.38	2.23
36	-2.57	3.26	.6137	-.42	2.38	.1805	.0124	-3.05	3.00	.0774	-.37	2.23
48	-2.50	3.28	.5530	-.44	2.40	.0129	.0672	-3.07	3.20	.0321	-.37	2.33
60	-2.41	3.29	.5025	-.41	2.43	.0228	.0431	-3.10	3.31	.0392	-.37	2.33
72	-2.35	3.30	.4315	-.33	2.42	.0258	.0336	-3.09	3.45	.1307	-.34	2.32

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN X	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-3.20	3.62	.7113	-.43	2.13	.2517	.3239	.1539	.0693	.2132	.49	.1539	-.49	2.49	.1228	-.49	2.04
24	-3.69	3.65	.6840	-.50	2.15	.3239	.1609	.1151	.1291	.1291	-.45	.1609	-.45	2.61	.1042	-.45	1.99
36	-3.57	3.65	.6341	-.49	2.14	.1677	.1641	-.0019	.1884	.1912	-.47	.1641	-.47	2.75	.1884	-.47	2.08
48	-3.48	3.67	.5471	-.48	2.15	.0318	.1519	-.0243	.1143	.1143	-.42	.1519	-.42	2.99	.2018	-.42	2.11
60	-3.38	3.70	.5153	-.47	2.17	.0253	.1241	-.0653	.0845	.0845	-.48	.1241	-.48	3.07	.1780	-.48	2.11
72	-3.25	3.74	.4553	-.46	2.18	-.0038	.1278	-.0651	.1217	.1217	-.45	.1278	-.45	3.18	.2097	-.45	2.11

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
-4.06	-.50

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN X	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-4.73	3.94	.7268	-.35	2.14	.2123	.1481	.0327	.1811	.1811	-.35	.1481	-.35	2.68	.1809	-.35	2.07
24	-4.57	3.98	.7027	-.33	2.17	.2201	.1492	.0715	.0746	.0746	-.35	.1492	-.35	2.79	.1679	-.35	2.07
36	-4.42	4.00	.6511	-.35	2.17	.1006	.1431	.0079	.1090	.1090	-.33	.1431	-.33	2.95	.2055	-.33	2.11
48	-4.26	4.01	.6312	-.35	2.17	.0525	.1408	-.0275	.1055	.1055	-.32	.1408	-.32	3.05	.2283	-.32	2.12
60	-4.14	4.04	.5540	-.34	2.18	-.0201	.1259	-.0803	.0603	.0603	-.30	.1259	-.30	3.27	.2464	-.30	2.12
72	-3.99	4.08	.5228	-.35	2.18	.0149	.1104	-.1015	.0333	.0333	-.29	.1104	-.29	3.35	.2523	-.29	2.11

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
-4.99	-.32

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (53214) - VANCOUVER
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.3

ALTITUDE (M) - 24

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN X GIVEN YP	S.D. X GIVEN YP
DT	-5.58	4.05	.0451	-.22	2.17	500						-5.72	-.24
12	-5.44	4.25	.7731	-.23	2.21		-.23	2.21	.0451	-5.80	2.55	.0581	2.12
24	-5.27	4.12	.7428	-.21	2.21		-.21	2.21	.0451	-5.31	2.63	.0314	2.13
36	-5.15	4.16	.5938	-.19	2.22		-.19	2.22	.0537	-5.01	2.87	.0582	2.15
48	-4.97	4.21	.5574	-.21	2.23		-.21	2.23	.0443	-5.25	3.07	.0518	2.15
60	-4.81	4.25	.5152	-.18	2.23		-.18	2.23	.0428	-5.11	3.13	.1243	2.15
72	-4.67	4.31	.5551	-.18	2.23		-.18	2.23	.0424	-5.14	3.33	.1259	2.15

ALTITUDE (M) - 25

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN X GIVEN YP	S.D. X GIVEN YP
DT	-5.07	4.24	.0383	-.11	2.13	500						-5.23	-.13
12	-5.31	4.28	.8075	-.14	2.13		-.14	2.13	.0383	-5.32	2.48	.1125	2.10
24	-5.75	4.30	.7535	-.13	2.13		-.13	2.13	.0418	-5.43	2.71	.1191	2.15
36	-5.53	4.37	.7482	-.13	2.20		-.13	2.20	.0555	-5.53	2.80	.2134	2.18
48	-5.43	4.41	.5783	-.12	2.20		-.12	2.20	.0432	-5.53	3.11	.2222	2.18
60	-5.28	4.50	.5213	-.11	2.22		-.11	2.22	.0473	-5.63	3.23	.2243	2.15
72	-5.14	4.55	.5831	-.11	2.22		-.11	2.22	.0594	-5.57	3.44	.1934	2.17

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP,X)	MEAN XP	S.D. YP	R (XP,Y)	MEAN YP	S.D. YF	R (YP,X)
	-6.56	4.55	.1020	-.05	2.18	600	-6.68	.05								
12	-5.41	4.55	2.25	.2542	.0877	.0338	2.53	.1040	-5.75	.1419				-.02	2.11	
25	-5.22	4.57	2.19	.1488	.0775	.0338	2.71	.0727	-6.32	.0874			-.05	2.15		
35	-5.04	4.72	2.13	.1043	.0754	.0336	2.94	.1582	-7.03	.0547			-.04	2.17		
48	-5.87	4.77	2.25	-.0102	.0634	.0534	3.27	.1937	-7.11	.0824			-.04	2.18		
60	-5.153	4.85	2.23	-.0649	.0748	.0479	3.47	.1794	-7.13	.0437			-.04	2.17		
72	-5.154	4.83	2.24	-.0555	.0817	.0862	3.59	.2073	-7.55	.0811			-.02	2.17		

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (3224) - VANDEBERG

X = UAT 71
Y = V'AT 71

NO. 71	PER. OF REC.	ACT. CH.	ALPHA DEC.	MEAN	S.D.	P (1,1)	MEAN	S.D.	N
1	1.55	1.77	1.00	1.71	1.3	1.53	1.5	2.17	500
2	1.55	1.77	1.00	1.72	2.30	1.53	1.5	2.35	500
3	1.55	1.77	1.00	1.73	4.35	1.53	1.5	2.35	500
4	1.55	1.77	1.00	1.73	5.35	1.53	1.5	2.35	500
5	1.55	1.77	1.00	1.73	7.35	1.53	1.5	2.35	500
6	1.55	1.77	1.00	1.73	8.37	1.53	1.5	2.35	500
7	1.55	1.77	1.00	1.73	9.37	1.53	1.5	2.35	500
8	1.55	1.77	1.00	1.73	10.37	1.53	1.5	2.35	500
9	1.55	1.77	1.00	1.73	11.37	1.53	1.5	2.35	500
10	1.55	1.77	1.00	1.73	12.37	1.53	1.5	2.35	500
11	1.55	1.77	1.00	1.73	13.37	1.53	1.5	2.35	500
12	1.55	1.77	1.00	1.73	14.37	1.53	1.5	2.35	500
13	1.55	1.77	1.00	1.73	15.37	1.53	1.5	2.35	500
14	1.55	1.77	1.00	1.73	16.37	1.53	1.5	2.35	500
15	1.55	1.77	1.00	1.73	17.37	1.53	1.5	2.35	500
16	1.55	1.77	1.00	1.73	18.37	1.53	1.5	2.35	500
17	1.55	1.77	1.00	1.73	19.37	1.53	1.5	2.35	500
18	1.55	1.77	1.00	1.73	20.37	1.53	1.5	2.35	500
19	1.55	1.77	1.00	1.73	21.37	1.53	1.5	2.35	500
20	1.55	1.77	1.00	1.73	22.37	1.53	1.5	2.35	500
21	1.55	1.77	1.00	1.73	23.37	1.53	1.5	2.35	500
22	1.55	1.77	1.00	1.73	24.37	1.53	1.5	2.35	500
23	1.55	1.77	1.00	1.73	25.37	1.53	1.5	2.35	500
24	1.55	1.77	1.00	1.73	26.37	1.53	1.5	2.35	500
25	1.55	1.77	1.00	1.73	27.37	1.53	1.5	2.35	500
26	1.55	1.77	1.00	1.73	28.37	1.53	1.5	2.35	500
27	1.55	1.77	1.00	1.73	29.37	1.53	1.5	2.35	500
28	1.55	1.77	1.00	1.73	30.37	1.53	1.5	2.35	500
29	1.55	1.77	1.00	1.73	31.37	1.53	1.5	2.35	500
30	1.55	1.77	1.00	1.73	32.37	1.53	1.5	2.35	500
31	1.55	1.77	1.00	1.73	33.37	1.53	1.5	2.35	500
32	1.55	1.77	1.00	1.73	34.37	1.53	1.5	2.35	500
33	1.55	1.77	1.00	1.73	35.37	1.53	1.5	2.35	500
34	1.55	1.77	1.00	1.73	36.37	1.53	1.5	2.35	500
35	1.55	1.77	1.00	1.73	37.37	1.53	1.5	2.35	500
36	1.55	1.77	1.00	1.73	38.37	1.53	1.5	2.35	500
37	1.55	1.77	1.00	1.73	39.37	1.53	1.5	2.35	500
38	1.55	1.77	1.00	1.73	40.37	1.53	1.5	2.35	500
39	1.55	1.77	1.00	1.73	41.37	1.53	1.5	2.35	500
40	1.55	1.77	1.00	1.73	42.37	1.53	1.5	2.35	500
41	1.55	1.77	1.00	1.73	43.37	1.53	1.5	2.35	500
42	1.55	1.77	1.00	1.73	44.37	1.53	1.5	2.35	500
43	1.55	1.77	1.00	1.73	45.37	1.53	1.5	2.35	500
44	1.55	1.77	1.00	1.73	46.37	1.53	1.5	2.35	500
45	1.55	1.77	1.00	1.73	47.37	1.53	1.5	2.35	500
46	1.55	1.77	1.00	1.73	48.37	1.53	1.5	2.35	500
47	1.55	1.77	1.00	1.73	49.37	1.53	1.5	2.35	500
48	1.55	1.77	1.00	1.73	50.37	1.53	1.5	2.35	500
49	1.55	1.77	1.00	1.73	51.37	1.53	1.5	2.35	500
50	1.55	1.77	1.00	1.73	52.37	1.53	1.5	2.35	500
51	1.55	1.77	1.00	1.73	53.37	1.53	1.5	2.35	500
52	1.55	1.77	1.00	1.73	54.37	1.53	1.5	2.35	500
53	1.55	1.77	1.00	1.73	55.37	1.53	1.5	2.35	500
54	1.55	1.77	1.00	1.73	56.37	1.53	1.5	2.35	500
55	1.55	1.77	1.00	1.73	57.37	1.53	1.5	2.35	500
56	1.55	1.77	1.00	1.73	58.37	1.53	1.5	2.35	500
57	1.55	1.77	1.00	1.73	59.37	1.53	1.5	2.35	500
58	1.55	1.77	1.00	1.73	60.37	1.53	1.5	2.35	500
59	1.55	1.77	1.00	1.73	61.37	1.53	1.5	2.35	500
60	1.55	1.77	1.00	1.73	62.37	1.53	1.5	2.35	500
61	1.55	1.77	1.00	1.73	63.37	1.53	1.5	2.35	500
62	1.55	1.77	1.00	1.73	64.37	1.53	1.5	2.35	500
63	1.55	1.77	1.00	1.73	65.37	1.53	1.5	2.35	500
64	1.55	1.77	1.00	1.73	66.37	1.53	1.5	2.35	500
65	1.55	1.77	1.00	1.73	67.37	1.53	1.5	2.35	500
66	1.55	1.77	1.00	1.73	68.37	1.53	1.5	2.35	500
67	1.55	1.77	1.00	1.73	69.37	1.53	1.5	2.35	500
68	1.55	1.77	1.00	1.73	70.37	1.53	1.5	2.35	500
69	1.55	1.77	1.00	1.73	71.37	1.53	1.5	2.35	500
70	1.55	1.77	1.00	1.73	72.37	1.53	1.5	2.35	500
71	1.55	1.77	1.00	1.73	73.37	1.53	1.5	2.35	500
72	1.55	1.77	1.00	1.73	74.37	1.53	1.5	2.35	500
73	1.55	1.77	1.00	1.73	75.37	1.53	1.5	2.35	500
74	1.55	1.77	1.00	1.73	76.37	1.53	1.5	2.35	500
75	1.55	1.77	1.00	1.73	77.37	1.53	1.5	2.35	500
76	1.55	1.77	1.00	1.73	78.37	1.53	1.5	2.35	500
77	1.55	1.77	1.00	1.73	79.37	1.53	1.5	2.35	500
78	1.55	1.77	1.00	1.73	80.37	1.53	1.5	2.35	500
79	1.55	1.77	1.00	1.73	81.37	1.53	1.5	2.35	500
80	1.55	1.77	1.00	1.73	82.37	1.53	1.5	2.35	500
81	1.55	1.77	1.00	1.73	83.37	1.53	1.5	2.35	500
82	1.55	1.77	1.00	1.73	84.37	1.53	1.5	2.35	500
83	1.55	1.77	1.00	1.73	85.37	1.53	1.5	2.35	500
84	1.55	1.77	1.00	1.73	86.37	1.53	1.5	2.35	500
85	1.55	1.77	1.00	1.73	87.37	1.53	1.5	2.35	500
86	1.55	1.77	1.00	1.73	88.37	1.53	1.5	2.35	500
87	1.55	1.77	1.00	1.73	89.37	1.53	1.5	2.35	500
88	1.55	1.77	1.00	1.73	90.37	1.53	1.5	2.35	500
89	1.55	1.77	1.00	1.73	91.37	1.53	1.5	2.35	500
90	1.55	1.77	1.00	1.73	92.37	1.53	1.5	2.35	500
91	1.55	1.77	1.00	1.73	93.37	1.53	1.5	2.35	500
92	1.55	1.77	1.00	1.73	94.37	1.53	1.5	2.35	500
93	1.55	1.77	1.00	1.73	95.37	1.53	1.5	2.35	500
94	1.55	1.77	1.00	1.73	96.37	1.53	1.5	2.35	500
95	1.55	1.77	1.00	1.73	97.37	1.53	1.5	2.35	500
96	1.55	1.77	1.00	1.73	98.37	1.53	1.5	2.35	500
97	1.55	1.77	1.00	1.73	99.37	1.53	1.5	2.35	500
98	1.55	1.77	1.00	1.73	100.37	1.53	1.5	2.35	500
99	1.55	1.77	1.00	1.73	101.37	1.53	1.5	2.35	500
100	1.55	1.77	1.00	1.73	102.37	1.53	1.5	2.35	500

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION: 32224 - JANDREBES
 MONTH OF RECORDS - OCTOBER
 PERIOD OF RECORDS - 1/65 - 12/74
 ALTITUDE - 5000

ALTITUDE (M) - 0

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	1.23	2.53	-0.5814	-1.25	2.54	820		1.34	2.52	-0.5573	-1.23	2.53	1.34	2.53	820		1.34	2.52	-0.5573	-1.23	2.53
24																					
36																					
48																					
60																					
72																					

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (M) - 0

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	1.27	2.53	-0.5823	-1.24	2.57	820		1.37	2.52	-0.5573	-1.23	2.53	1.37	2.53	820		1.37	2.52	-0.5573	-1.23	2.53
24																					
36																					
48																					
60																					
72																					

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ORIGINAL PAGE IS
OF POOR QUALITY

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VIJENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
54		4.43	-0.2667	-1.84	5.21	820						.76	-2.07
DT	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,Y)	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	.57	4.48	.5736	-1.57	5.21	.7235	.71	3.13	-.1183	-1.91	4.21		
24	.52	4.45	.4448	-1.57	5.20	.5517	.55	3.89	-.2041	-1.83	5.29		
36	.57	4.42	.2314	-1.57	5.23	.3102	.51	4.27	-.2330	-1.76	5.83		
48	.73	4.39	.1523	-1.72	5.24	.2216	.58	4.40	-.2532	-1.72	6.01		
60	.72	4.38	.0755	-1.71	5.23	.1577	.57	4.44	-.2552	-1.70	6.03		
72	.72	4.37	.0552	-1.65	5.22	.0945	.55	4.47	-.2553	-1.68	6.12		

ALTITUDE (M) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
214		6.17	-0.2152	-2.02	7.35	820						2.38	-2.49
DT	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,Y)	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	2.13	6.12	.7459	-2.05	7.34	.7985	2.34	3.81	.0781	-2.35	4.35		
24	2.22	6.12	.5596	-2.10	7.34	.5863	2.29	4.90	-.1305	-2.23	5.85		
36	2.27	6.07	.3552	-2.18	7.32	.3953	2.23	5.57	-.1535	-2.14	6.69		
48	2.34	6.05	.2216	-2.24	7.30	.2876	2.19	5.88	-.1735	-2.09	7.01		
60	2.35	6.02	.1436	-2.21	7.31	.2107	2.18	6.00	-.1867	-2.08	7.17		
72	2.42	6.01	.1235	-2.11	7.33	.1542	2.18	6.04	-.2018	-2.09	7.24		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	3.96	7.73	.7966	-2.57	8.67	.8133	.8133	-.0803	.0638	-.2372	4.10	.0090	-2.76	4.95
24	4.00	7.70	.5872	-2.66	8.62	.5890	.5890	-.0754	.1166	-.2740	4.05	.0314	-2.64	6.90
36	4.06	7.67	.3963	-2.74	8.59	.4130	.4130	-.0688	.1012	-.2555	3.98	-.0403	-2.57	7.86
48	4.15	7.60	.2712	-2.81	8.54	.2948	.2948	-.0616	.0703	-.2207	3.93	-.0522	-2.54	8.29
60	4.18	7.56	.1962	-2.76	8.54	.2173	.2173	-.0612	.0548	-.1965	3.93	-.0627	-2.55	8.49
72	4.25	7.53	.1672	-2.65	8.56	.1483	.1483	-.0581	.0768	-.1767	3.93	-.0796	-2.56	8.59

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
4.14	-2.90

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	5.60	8.92	.0530	-2.67	9.83	.0530	-2.67	9.83	620	5.80	4.91	.1551	-2.67	5.84
24	5.66	8.86	.0232	-2.75	9.78	.0232	.7999	.0636	.1385	-.0882	5.73	.1029	-2.73	8.02
36	5.76	8.86	.0128	-2.89	9.71	.0128	.5697	.0669	.1384	-.1305	5.65	.0932	-2.68	8.99
48	5.81	8.81	.0159	-2.97	9.68	.0159	.3942	.0656	.1147	-.1550	5.61	.0859	-2.66	9.40
60	5.86	8.75	.0159	-3.05	9.65	.0159	.2860	.0681	.0793	-.1512	5.61	.0759	-2.69	9.58
72	5.94	8.70	.0174	-2.94	9.68	.0174	.2152	.0677	.0771	-.1544	5.61	.0613	-2.71	9.70

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
5.85	-3.03

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. YP
12	7.06	10.06	.8193	-2.81	11.18	.7881	.7881	.1131	.1613	.0039	7.14	.1379	-2.94	6.86
24	7.11	10.04	.6154	-2.95	11.10	.5653	.5653	.1121	.1423	-.0671	7.07	.1454	-2.80	9.22
36	7.19	10.05	.4578	-3.06	11.08	.3898	.3898	.1091	.1135	-.0988	7.01	.1352	-2.73	10.31
48	7.23	9.96	.3392	-3.11	11.04	.2865	.2865	.1054	.0945	-.1181	6.99	.1305	-2.71	10.74
60	7.25	9.91	.2593	-3.01	11.04	.2168	.2168	.1076	.0877	-.1221	7.00	.1215	-2.74	10.94
72	7.36	9.86	.2202	-2.92	11.08	.1508	.1508	.1121	.0969	-.1322	6.99	.1111	-2.75	11.06

ALTITUDE (KM) - 7

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. YP
12	8.49	11.69	.1505	-2.87	12.74	.7767	.7767	.1555	.1897	.0466	8.64	.1539	-3.11	7.97
24						.5351	.5351	.1534	.1514	-.0370	8.58	.1888	-2.95	10.72
36						.3547	.3547	.1539	.1090	-.0753	8.52	.1834	-2.89	11.89
48						.2492	.2492	.1546	.0779	-.0974	8.49	.1780	-2.86	12.32
60						.1877	.1877	.1521	.0743	-.0988	8.49	.1666	-2.88	12.50
72						.1332	.1332	.1539	.0779	-.1099	8.48	.1593	-2.89	12.59

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (193214) - VANDENBERG
MONTH OF RECORD - OCTOBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN R	S.D. R	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	9.88	13.01	.2050	-2.74	14.36	620	9.85	12.93	.7728	-2.91	14.28	.2053	.2081	10.00	8.22	.2179	-3.02	9.29
24							9.86	12.94	.5398	-3.10	14.09	.2016	.1575	9.97	10.86	.2415	-2.85	12.27
36							9.90	12.93	.3777	-3.23	13.98	.2016	.1169	9.91	11.93	.2322	-2.74	13.51
48							9.94	12.65	.2825	-3.34	13.93	.1996	.0830	9.88	12.34	.2265	-2.73	14.00
60							10.00	12.74	.2076	-3.29	14.04	.1986	.0871	9.87	12.55	.2155	-2.74	14.12
72							10.14	12.69	.2030	-3.23	14.12	.1971	.0933	9.84	12.65	.2073	-2.76	14.20

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X
GIVEN Y
9.98 -3.29

ALTITUDE (KM) - 9

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN R	S.D. R	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	11.35	14.29	.2673	-2.69	15.55	620	11.33	14.20	.7774	-2.88	15.47	.2659	.2442	11.46	8.94	.3048	-2.97	10.30
24							11.33	14.21	.5519	-3.09	15.26	.2570	.1826	11.43	11.81	.3097	-2.77	13.35
36							11.34	14.18	.3859	-3.28	15.12	.2569	.1249	11.39	13.05	.3006	-2.68	14.66
48							11.38	14.10	.2947	-3.32	15.12	.2518	.0904	11.37	13.53	.2891	-2.68	15.17
60							11.44	13.93	.2480	-3.26	15.15	.2425	.0699	11.35	13.74	.2803	-2.59	15.27
72							11.62	13.86	.2113	-3.24	15.26	.2373	.1075	11.31	13.91	.2696	-2.71	15.29

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X
GIVEN Y
11.43 -3.27

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (3214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 52.0
 X = U(1, T)
 Y = V(1, T)
 XP = U(1, T) + D7
 YP = V(1, T) + D7

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (Y, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	13.09	15.02	.3307	-2.82	16.26									
12	13.13	14.91	.7755	-3.17	16.20	.2955	-3.10	15.10	.1972	13.10	9.44	.3748	-3.17	10.85
24	13.05	14.92	.5517	-3.25	15.04	.2964	13.12	12.43	.0535	13.12	12.43	.3753	-2.94	13.36
36	13.08	14.85	.3910	-3.13	15.04	.2868	13.09	13.09	-.0277	13.09	13.63	.3744	-2.84	13.30
48	13.13	14.75	.2378	-3.46	15.32	.2819	13.17	13.17	-.0400	13.17	14.21	.3255	-2.83	13.57
60	13.21	14.55	.2510	-3.19	15.93	.2723	13.08	13.08	-.0375	13.08	14.45	.3177	-2.84	13.96
72	13.33	14.52	.2248	-3.35	15.03	.2559	13.02	13.02	-.0319	13.02	14.57	.3070	-2.85	15.33

GIVEN X

GIVEN Y

13.08

-3.48

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (Y, YP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	14.94	15.18	.3209	-2.68	16.24									
12	14.89	15.04	.7369	-2.95	16.20	.3205	-2.92	15.12	.2271	15.12	9.16	.3212	-3.07	10.85
24	14.94	15.04	.5736	-3.03	15.07	.3155	15.13	12.41	.0571	15.13	12.41	.3225	-2.82	13.34
36	14.84	15.00	.4153	-3.23	15.00	.3133	15.11	13.01	.0329	15.11	13.71	.3201	-2.73	15.15
48	14.88	14.88	.3156	-3.29	15.35	.3082	14.98	14.98	-.0055	14.98	14.29	.3200	-2.70	15.71
60	14.92	14.74	.2643	-3.22	15.95	.3015	14.97	14.97	-.0217	14.97	14.55	.3345	-2.71	15.90
72	15.05	14.72	.2133	-3.20	15.12	.2942	14.93	14.93	-.0213	14.93	14.77	.3302	-2.72	15.95

GIVEN X

GIVEN Y

14.97

-3.38

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - OCTOBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	MEAN Y	S.D. Y	R (X, Y)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	16.55	14.62	.8142	-2.76	15.44	.7653	.3209	.2829	.2297	16.83	8.50	16.83	8.50	.3209	.2829	.2297	16.83	8.50	.3209	-2.99	9.90
24	16.52	14.60	.5934	-2.94	15.29	.5200	.3130	.1966	.0930	16.82	11.85	16.82	11.85	.3130	.1966	.0930	16.82	11.85	.3130	-2.75	13.17
36	16.54	14.54	.4270	-3.06	15.23	.3651	.3114	.1468	.0268	16.77	13.20	16.77	13.20	.3114	.1468	.0268	16.77	13.20	.3114	-2.65	14.26
48	16.57	14.43	.3251	-3.09	15.21	.2532	.3077	.1194	-.0183	16.74	13.75	16.74	13.75	.3077	.1194	-.0183	16.74	13.75	.3077	-2.61	14.89
60	16.60	14.28	.2512	-3.00	15.25	.2012	.3043	.1100	-.0404	16.72	14.04	16.72	14.04	.3043	.1100	-.0404	16.72	14.04	.3043	-2.61	15.09
72	16.70	14.26	.2109	-2.97	15.36	.1686	.3041	.0961	-.0293	16.68	14.27	16.68	14.27	.3041	.0961	-.0293	16.68	14.27	.3041	-2.61	15.19

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
16.77	-3.35

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	MEAN Y	S.D. Y	R (X, Y)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	16.74	12.81	.8128	-2.49	13.47	.7699	.2328	.2626	.2016	16.96	7.37	16.96	7.37	.2328	.2626	.2016	16.96	7.37	.2328	-2.67	8.54
24	16.75	12.82	.5961	-2.67	13.36	.5393	.2856	.1930	.0871	16.93	10.27	16.93	10.27	.2856	.1930	.0871	16.93	10.27	.2856	-2.45	11.29
36	16.75	12.72	.4354	-2.80	13.34	.3772	.2875	.1328	.0123	16.91	11.49	16.91	11.49	.3772	.1328	.0123	16.91	11.49	.3772	-2.35	12.41
48	16.80	12.51	.3251	-2.81	13.35	.2583	.2907	.1113	-.0238	16.88	12.00	16.88	12.00	.2907	.1113	-.0238	16.88	12.00	.2907	-2.32	12.91
60	16.87	12.49	.2639	-2.71	13.39	.2031	.2925	.1052	-.0402	16.85	12.29	16.85	12.29	.2925	.1052	-.0402	16.85	12.29	.2925	-2.33	13.11
72	16.93	12.46	.2218	-2.67	13.43	.1537	.2965	.0904	-.0485	16.83	12.45	16.83	12.45	.2965	.0904	-.0485	16.83	12.45	.2965	-2.32	13.24

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
16.89	-3.04

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/85 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X, X)	MEAN YP	S.D. YP	R (Y, YP)	P (XP, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	15.97	11.14	.2825	-1.97	11.71	.7854	.2757	15.97	11.68	620	15.21	6.35	.2556	-2.21	7.18
35	43	15.93	11.10	.5123	-2.13	11.64	.5719	.2631	15.93	11.68	620	15.21	8.76	.3059	-2.11	9.54
43	60	15.97	11.03	.5524	-2.26	11.64	.4282	.2743	15.97	11.68	620	15.17	9.89	.3134	-1.91	10.55
60	72	15.95	10.96	.3522	-2.23	11.62	.3203	.2825	15.95	11.68	620	15.13	10.35	.2917	-1.89	11.05
		15.95	10.88	.2813	-2.20	11.63	.2331	.2882	15.95	11.68	620	15.09	10.65	.2783	-1.88	11.30
		15.11	10.85	.2125	-2.20	11.57	.1928	.2942	15.11	11.68	620	15.07	10.66	.2812	-1.87	11.44

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X, X)	MEAN YP	S.D. YP	R (Y, YP)	P (XP, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	14.38	9.13	.2528	-1.74	9.72	.7703	.2662	14.38	9.68	620	14.53	5.24	.2832	-1.91	6.14
35	43	14.32	9.15	.5123	-1.84	9.71	.5574	.2667	14.32	9.68	620	14.53	7.01	.2932	-1.76	8.00
43	60	14.32	9.10	.5722	-1.97	9.71	.4045	.2690	14.32	9.68	620	14.50	7.97	.3004	-1.66	8.83
60	72	14.36	9.05	.3752	-1.99	9.68	.3174	.2601	14.36	9.68	620	14.49	8.41	.2811	-1.64	9.16
		14.43	8.97	.3125	-1.93	9.65	.2405	.2682	14.43	9.68	620	14.45	8.64	.2717	-1.63	9.37
		14.43	8.94	.2371	-1.94	9.67	.1971	.2825	14.43	9.68	620	14.45	8.81	.2776	-1.63	9.48

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VALDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	P (YP,Y)	P (YP,X)	MEAN XP	S.D. XP	P (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	11.99	7.55	.1974	-1.49	7.80	520	-1.57	7.82	.8973	-1.57	7.82	.2519	.0709	.0709	12.18	4.46	.1770	12.13	-1.93	-1.74	4.81
24							-1.63	7.80	.8973	-1.63	7.80	.2519	.0709	.0709	12.17	4.46	.1770			-1.74	4.81
36							-1.63	7.80	.8973	-1.63	7.80	.2519	.0709	.0709	12.13	6.51	.1770			-1.57	6.87
48							-1.72	7.80	.8973	-1.72	7.80	.2519	.0709	.0709	12.08	6.94	.1770			-1.58	7.42
60							-1.68	7.75	.8973	-1.68	7.75	.2519	.0709	.0709	12.07	7.17	.1770			-1.55	7.42
72							-1.71	7.74	.8973	-1.71	7.74	.2519	.0709	.0709	12.05	7.34	.1770			-1.54	7.55

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	P (YP,Y)	P (YP,X)	MEAN XP	S.D. XP	P (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	8.97	6.21	.1603	-1.30	5.99	620	-1.35	6.05	.7593	-1.35	6.05	.1693	.2542	.0431	9.11	3.94	.0720	9.11	-1.53	-1.53	3.77
24							-1.41	6.07	.7593	-1.41	6.07	.1693	.2542	.0431	9.10	4.23	.0720			-1.44	4.59
36							-1.48	6.08	.7593	-1.48	6.08	.1693	.2542	.0431	9.05	5.28	.0720			-1.38	5.28
48							-1.50	6.09	.7593	-1.50	6.09	.1693	.2542	.0431	9.04	5.55	.0720			-1.35	5.55
60							-1.52	6.05	.7593	-1.52	6.05	.1693	.2542	.0431	9.00	5.75	.0720			-1.35	5.71
72							-1.53	6.03	.7593	-1.53	6.03	.1693	.2542	.0431	8.99	5.96	.0720			-1.34	5.82

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	5.97	5.02	.1535	-1.25	4.53	620	6.05	3.58	.0845	-1.39	3.17	6.06	-1.46
24	5.98	4.99	.1639	.5840	.1639	.2320	6.05	3.58	.0845	-1.39	3.17		
36	5.99	4.99	.1639	.5840	.1639	.2320	6.05	3.58	.0845	-1.39	3.17		
48	6.01	5.00	.1756	.4304	.1756	.2412	6.02	4.35	.1170	-1.31	3.59		
60	6.05	4.98	.1915	.3027	.1915	.2108	6.00	4.56	.1374	-1.28	4.02		
72	6.09	4.98	.1995	.1867	.1995	.1505	5.99	4.73	.1482	-1.26	4.26		
			.2154	.1421	.2154	.0973	5.98	4.80	.1624	-1.26	4.48		

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	3.59	4.44	.2103	-1.33	3.54	620	3.70	3.70	-1.44				
24	3.60	4.41	.2135	.6552	.2135	.2574	3.65	3.24	.0959	-1.39	2.64		
36	3.62	4.41	.2152	.5961	.2152	.2695	3.65	3.44	.1105	-1.37	2.75		
48	3.64	4.42	.2191	.4021	.2191	.2539	3.64	3.83	.1571	-1.35	3.18		
60	3.66	4.44	.2320	.3086	.2320	.2269	3.62	4.00	.1741	-1.35	3.32		
72	3.72	4.45	.2428	.2214	.2428	.1478	3.60	4.15	.2000	-1.35	3.43		
			.2558	.1699	.2558	.1431	3.59	4.22	.1980	-1.34	3.47		

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12 - Mr. Kelly

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	1.45	4.32	1.43	4.33	.2176	-.96	2.91	620	1.47	4.03	-.100	1.44	3.13	.1343	-.37	2.59
24	1.48	4.33										1.43	3.26	.1151	-.37	2.69
36	1.52	4.36										1.41	3.64	.1895	-.96	2.79
48	1.58	4.39										1.38	3.88	.1891	-.97	2.84
60	1.64	4.37										1.37	4.01	.2247	-.96	2.89
72	1.67	4.41										1.36	4.03	.2317	-.96	2.91

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	1.49	4.50	1.43	4.55	.1465	-.77	2.89	620	1.37	4.19	-.68	1.36	3.12	.0130	-.73	2.61
24	1.54	4.51										1.32	3.45	.0214	-.74	2.64
36	1.57	4.52										1.31	3.77	.1004	-.75	2.77
48	1.62	4.56										1.31	3.88	.1500	-.75	2.85
60	1.70	4.54										1.30	4.13	.1517	-.77	2.88
72	1.76	4.58										1.29	4.19	.1771	-.76	2.88

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF Y, Y, YP, YP
 STATION 1322-1 - 12/05/50
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALTITUDE ABOVE - 350

ALTITUDE (M) - 24

QUADRIVARIATE NORMAL STATISTICS OF Y, Y, YP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR YP AND YP

	MEAN Y	S.D. Y	P (Y, Y)	MEAN YP	S.D. YP	P (YP, Y)	MEAN Y	S.D. Y	P (Y, Y)	MEAN YP	S.D. YP	P (YP, Y)	MEAN YP	S.D. YP	P (YP, Y)
12	1.92	4.36	.1258	-1.55	2.34	.820	1.92	4.36	.1258	-1.55	2.34	.820	1.92	4.36	.1258
12	1.97	4.36	.1258	-1.55	2.34	.820	1.97	4.36	.1258	-1.55	2.34	.820	1.97	4.36	.1258
24	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258
36	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258
48	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258
60	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258
72	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258	-1.55	2.34	.820	2.15	4.36	.1258

ALTITUDE (M) - 25

QUADRIVARIATE NORMAL STATISTICS OF Y, Y, YP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR YP AND YP

	MEAN Y	S.D. Y	P (Y, Y)	MEAN YP	S.D. YP	P (YP, Y)	MEAN Y	S.D. Y	P (Y, Y)	MEAN YP	S.D. YP	P (YP, Y)	MEAN YP	S.D. YP	P (YP, Y)
12	2.34	5.48	.1995	-1.45	2.83	.820	2.34	5.48	.1995	-1.45	2.83	.820	2.34	5.48	.1995
12	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995
24	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995
36	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995
48	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995
60	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995
72	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995	-1.45	2.83	.820	2.45	5.48	.1995

QUADRAVARIATE A'D CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	3.28	6.23	.1811	-.21	3.00	620								
12	3.43	6.17	.8583	-.20	3.01	.4729	.1839	.1538	.1909	2.91	3.19	.0753	-.12	2.84
24	3.56	6.17	.8123	-.21	3.03	.3936	.1884	.1434	.1445	2.80	3.63	.0663	-.15	2.74
36	3.67	6.18	.7824	-.24	3.05	.2589	.1915	.1443	.1653	2.76	4.03	.1069	-.18	2.88
48	3.77	6.22	.7037	-.23	3.06	.1320	.1978	.0850	.1599	2.73	4.43	.1692	-.20	2.97
60	3.88	6.22	.6476	-.27	3.05	.0970	.2127	.0187	.1610	2.71	4.75	.2199	-.18	2.99
72	4.03	6.27	.5998	-.27	3.06	.0602	.2185	-.0163	.1469	2.67	4.99	.2378	-.17	2.99

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	4.38	6.91	.2076	-.15	3.30	620								
12	4.53	6.85	.8608	-.16	3.34	.5460	.2104	.1663	.2060	3.87	3.51	.1202	-.02	2.76
24	4.68	6.84	.8320	-.16	3.37	.4063	.2138	.1848	.1827	3.75	3.83	.1033	-.09	3.00
36	4.86	6.83	.7593	-.16	3.37	.3026	.2221	.1306	.1923	3.68	4.49	.1645	-.10	2.14
48	5.01	6.86	.7205	-.14	3.37	.1384	.2190	.0742	.1751	3.60	4.79	.2215	-.14	3.27
60	5.17	6.88	.5618	-.14	3.38	.0576	.2207	.0193	.1720	3.57	5.18	.2585	-.14	3.30
72	5.35	6.96	.6213	-.14	3.39	.0601	.2214	-.0107	.1606	3.52	5.41	.2722	-.11	3.29

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION 1932(14) - VANDENBERG

X = J(14)
Y = J(14 T)

MON.	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N
0000	1/55 - 12/74	0 - 2	00	1.33	53	55.14	25	67.25	0000
0000	1/55 - 12/74	2 - 3	00	1.37	53	55.23	25	67.25	0000
0000	1/55 - 12/74	3 - 4	00	1.54	53	55.27	25	67.25	0000
0000	1/55 - 12/74	4 - 5	00	2.14	53	55.27	25	67.25	0000
0000	1/55 - 12/74	5 - 6	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	6 - 7	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	7 - 8	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	8 - 9	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	9 - 10	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	10 - 11	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	11 - 12	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	12 - 13	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	13 - 14	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	14 - 15	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	15 - 16	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	16 - 17	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	17 - 18	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	18 - 19	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	19 - 20	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	20 - 21	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	21 - 22	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	22 - 23	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	23 - 24	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	24 - 25	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	25 - 26	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	26 - 27	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	27 - 28	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	28 - 29	00	2.51	53	55.27	25	67.25	0000
0000	1/55 - 12/74	29 - 30	00	2.51	53	55.27	25	67.25	0000

ALTITUDE (KM)		QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
0		S.D.		R		MEAN		S.D.		N		GIVEN X		GIVEN Y		S.D.	
		(X, Y)		(X, Y)		(Y, Y)		(XP, YP)		(XP, Y)		(YP, X)		R (XP, YP)		R (XP, YP)	
MEAN X	70	2.69	-0.5711	-0.92	3.11	600	0.57	-0.68	2.54	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. X	2.69																
R (X, Y)																	
MEAN Y																	
S.D. Y																	
R (X, YP)																	
MEAN XP	69	2.69	3.12	0.3681	-0.5724	-0.0323	-0.1130	0.67	2.54	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. XP	2.69																
R (X, XP)																	
MEAN YP	68	2.70	3.15	0.4334	-0.5687	-0.3165	-0.4118	0.82	2.51	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. YP	2.70																
R (Y, YP)																	
MEAN XP	68	2.70	3.15	0.5244	-0.5625	-0.1226	-0.2359	0.70	2.51	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. XP	2.70																
R (XP, YP)																	
MEAN YP	68	2.70	3.15	0.3084	-0.5549	-0.2359	-0.2789	0.64	2.51	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. YP	2.70																
R (XP, Y)																	
MEAN XP	65	2.70	3.18	0.2509	-0.5493	-0.1441	-0.0873	0.71	2.51	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. XP	2.70																
R (YP, X)																	
MEAN YP	64	2.71	3.18	0.0625	-0.5513	-0.2357	-0.2432	0.67	2.51	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. YP	2.71																
R (XP, Y)																	
MEAN XP	64	2.71	3.18	0.1785	-0.5513	-0.2357	-0.2432	0.67	2.51	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. XP	2.71																
R (XP, Y)																	
MEAN YP	64	2.71	3.18	0.1785	-0.5513	-0.2357	-0.2432	0.67	2.51	2.26	2.51	2.39	2.49	2.45	0.5415	0.4810	0.5351
S.D. YP	2.71																

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP									
MEAN		S.D.	R	MEAN	S.D.	R		N	
X	Y	X	(X,Y)	Y	Y	(X,Y)	(Y,Y)	(X,Y)	(Y,Y)
.70		2.69	-.5711	-.92	3.11				600
<div> <div>ALTITUDE (KM)</div> <div>0</div> </div>									
CONDITIONAL BIVARIATE NORMAL STATISTICS									
GIVEN		S.D.	R	MEAN	S.D.	R		N	
X	Y	X	(X,Y)	Y	Y	(X,Y)	(Y,Y)	(X,Y)	(Y,Y)
.57	-.68								
<div> <div>DT</div> <div>HR</div> </div>									
.69		2.69	-.91	.3681	3.12				
.68		2.70	-.89	.4334	3.15				
.68		2.70	-.87	.5244	3.15				
.68		2.70	-.87	.5244	3.15				
.65		2.70	-.84	.5244	3.15				
.64		2.71	-.85	.5244	3.18				

DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP			CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP								
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
44	.42	3.83	-.1256	-1.18	6.89	600	.25	-.70	.30	-.0830	-.87	6.14
45	.39	3.88	-.119	.4554	6.95	600	.314	-.0868	.33	-.0830	-.99	6.66
46	.39	3.91	-.121	.2539	6.98	600	3.53	-.1120	.36	-.1226	-1.07	6.66
47	.38	3.95	-.119	.1387	7.01	600	3.72	-.1293	.37	-.1293	-1.13	6.66
48	.40	4.00	-.121	.1584	7.04	600	3.76	-.1348	.38	-.1348	-1.15	6.66
49	.43	4.03	-.123	.1078	7.09	600	3.78	-.1348	.38	-.1348	-1.15	6.66
50	.42	4.03	-.123	.1078	7.09	600	3.78	-.1348	.38	-.1348	-1.15	6.66

DT	QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP			CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP		
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
44	.42	3.83	-.1256	-1.18	6.89	600
45	.42	3.83	-.1256	-1.18	6.89	600
46	.42	3.83	-.1256	-1.18	6.89	600
47	.42	3.83	-.1256	-1.18	6.89	600
48	.42	3.83	-.1256	-1.18	6.89	600
49	.42	3.83	-.1256	-1.18	6.89	600
50	.42	3.83	-.1256	-1.18	6.89	600
51	.42	3.83	-.1256	-1.18	6.89	600
52	.42	3.83	-.1256	-1.18	6.89	600
53	.42	3.83	-.1256	-1.18	6.89	600
54	.42	3.83	-.1256	-1.18	6.89	600
55	.42	3.83	-.1256	-1.18	6.89	600
56	.42	3.83	-.1256	-1.18	6.89	600
57	.42	3.83	-.1256	-1.18	6.89	600
58	.42	3.83	-.1256	-1.18	6.89	600
59	.42	3.83	-.1256	-1.18	6.89	600
60	.42	3.83	-.1256	-1.18	6.89	600
61	.42	3.83	-.1256	-1.18	6.89	600
62	.42	3.83	-.1256	-1.18	6.89	600
63	.42	3.83	-.1256	-1.18	6.89	600
64	.42	3.83	-.1256	-1.18	6.89	600
65	.42	3.83	-.1256	-1.18	6.89	600
66	.42	3.83	-.1256	-1.18	6.89	600
67	.42	3.83	-.1256	-1.18	6.89	600
68	.42	3.83	-.1256	-1.18	6.89	600
69	.42	3.83	-.1256	-1.18	6.89	600
70	.42	3.83	-.1256	-1.18	6.89	600
71	.42	3.83	-.1256	-1.18	6.89	600
72	.42	3.83	-.1256	-1.18	6.89	600

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDEMBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN Y	GIVEN Y
12	7.45	8.51	.0937	-1.43	10.27	600							
24													
36													
48													
60													
72													

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN Y	GIVEN Y
12	9.69	10.28	.1543	-1.34	11.68	600							
24													
36													
48													
60													
72													

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (53214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	11.85	11.68	.2371	-1.53	13.60	600				10.89	-1.07					
12	12.02	11.76	.7800	-1.52	13.67	.7338	.7338	.2317	.2829	.1139		10.92	7.26	.1529	-1.37	9.11
24	12.16	11.76	.5960	-1.53	13.81	.5019	.5019	.2374	.2332	.0476		11.03	9.31	.2087	-1.49	11.65
36	12.31	11.84	.4727	-1.52	13.86	.3499	.3499	.2466	.1783	.0170		11.11	10.22	.2271	-1.54	12.68
48	12.46	11.91	.3850	-1.53	13.92	.2867	.2867	.2452	.1517	.0355		11.20	10.76	.2211	-1.56	12.98
60	12.60	11.93	.3434	-1.56	13.96	.2745	.2745	.2456	.1273	.0696		11.26	10.97	.2189	-1.53	13.05
72	12.65	11.93	.3068	-1.60	13.98	.2364	.2364	.2447	.1210	.0466		11.29	11.11	.2236	-1.55	13.19

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	13.78	13.06	.2947	-1.65	15.67	600				12.91	-1.05					
12	13.95	13.12	.7932	-1.66	15.82	.7068	.7068	.2892	.2879	.1707		12.91	7.97	.2487	-1.35	11.00
24	14.10	13.14	.5975	-1.71	16.02	.4854	.4854	.2943	.2189	.0751		12.93	10.42	.2899	-1.47	13.64
36	14.27	13.23	.4776	-1.72	16.07	.3470	.3470	.3032	.1724	.017		13.04	11.41	.2970	-1.56	14.66
48	14.42	13.31	.4026	-1.71	16.15	.2766	.2766	.3035	.1600	.0509		13.10	11.92	.2840	-1.64	15.01
60	14.57	13.34	.3631	-1.70	16.16	.2552	.2552	.3044	.1379	.0696		13.14	12.16	.2931	-1.64	15.12
72	14.63	13.34	.3015	-1.73	16.17	.2169	.2169	.3042	.1062	.0354		13.20	12.43	.2953	-1.61	15.28

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	15.77	14.44	.7908	-1.73	17.94	.2817	14.59	8.83	.2985	-1.25	12.44
24	15.93	14.46	.5913	-1.80	18.14	.1232	14.75	11.60	.3567	-1.36	15.59
36	16.11	14.52	.4744	-1.84	18.20	.1485	14.79	12.66	.3455	-1.47	16.59
48	16.30	14.61	.4075	-1.83	18.27	.1563	14.81	13.14	.3264	-1.61	16.91
60	16.48	14.67	.3778	-1.80	18.25	.1486	14.83	13.36	.3191	-1.63	17.00
72	16.53	14.68	.3216	-1.80	18.24	.1228	14.90	13.66	.3274	-1.62	17.16

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	17.27	15.71	.3727	-1.64	19.22	.2658	16.33	9.71	.3684	-1.01	13.34
24	17.68	15.67	.5934	-1.73	19.77	.1602	16.39	12.60	.4057	-1.19	16.92
36	17.87	15.75	.4629	-1.80	19.85	.1111	16.46	13.88	.3912	-1.32	18.02
48	18.07	15.84	.3914	-1.82	19.93	.0857	16.49	14.42	.3724	-1.46	18.31
60	18.26	15.91	.3614	-1.76	19.91	.1004	16.52	14.63	.3618	-1.53	18.40
72	18.32	15.92	.3110	-1.74	19.88	.0859	16.60	14.92	.3672	-1.52	18.56

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION 1932(4) - VANDENBERG
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 30.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
DT	19.06	16.91	.4074	-1.77	20.59	500	18.19	-1.86
	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	P (YP, X)
12	19.28	15.98	.7812	-1.30	20.35	.7232	.3948	.3050
24	19.46	15.89	.5953	-1.30	21.24	.4735	.3368	.1975
36	19.58	15.95	.4783	-2.11	21.34	.3436	.3977	.1435
48	19.69	17.09	.4073	-2.02	21.45	.3073	.4023	.1275
60	20.03	17.18	.3723	-1.96	21.43	.2988	.4106	.1328
72	20.13	17.16	.3459	-1.32	21.47	.2697	.4182	.1111
	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (XP, Y)	R (XP, YP)	P (YP, X)
12	18.20	12.55	.3641	18.20	12.55	.3259	.3948	.3050
24	18.24	13.57	.4197	18.24	13.57	.2235	.3368	.1975
36	18.29	14.35	.4106	18.29	14.35	.1746	.3977	.1435
48	18.30	15.42	.4309	18.30	15.42	.1728	.4023	.1275
60	18.32	15.69	.3975	18.32	15.69	.1647	.4106	.1328
72	18.41	16.04	.4015	18.41	16.04	.1495	.4182	.1111

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
DT	20.59	17.40	.4371	-1.34	20.66	500	19.80	-1.42
	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	P (YP, X)
12	20.83	17.37	.8022	-1.30	20.79	.7473	.4324	.3577
24	21.04	17.36	.6238	-1.40	21.24	.5194	.4332	.2526
36	21.29	17.43	.5173	-1.53	21.15	.3753	.4314	.1943
48	21.45	17.49	.4388	-1.56	21.24	.3425	.4355	.1737
60	21.69	17.55	.4012	-1.51	21.31	.3225	.4446	.1701
72	21.74	17.54	.3438	-1.45	21.27	.2752	.4523	.1477
	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	R (XP, Y)	R (XP, YP)	P (YP, X)
12	19.79	12.39	.3521	19.79	12.39	.3514	.4324	.3577
24	19.77	13.51	.4553	19.77	13.51	.2828	.4332	.2526
36	19.76	14.88	.4133	19.76	14.88	.2219	.4314	.1943
48	19.83	15.63	.4114	19.83	15.63	.2190	.4355	.1737
60	19.82	16.34	.4126	19.82	16.34	.2084	.4446	.1701
72	19.81	16.80	.4180	19.81	16.80	.1821	.4523	.1477

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
		21.74	15.95	.4380	-90	19.12	600													21.15	-11		
12		21.97	16.90	.8195	-80	19.13																	
24		22.15	16.87	.6486	-89	19.31																	
36		22.38	16.94	.5307	-100	19.44																	
48		22.56	17.01	.4579	-104	19.55																	
60		22.72	17.06	.4102	-100	19.61																	
72		22.80	17.04	.3489	-95	19.58																	

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
		21.38	15.16	.4344	-41	16.42	600													20.82	-04		
12		21.57	15.10	.8215	-28	16.33																	
24		21.70	15.06	.6559	-30	16.42																	
36		21.89	15.14	.5369	-38	16.51																	
48		22.09	15.23	.4748	-40	16.59																	
60		22.23	15.32	.4147	-40	16.66																	
72		22.35	15.30	.3537	-39	16.67																	

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

STATION	DATE	TIME	COORD	COND	INCL	BIVARIATE	NORMAL	STATISTICS OF	X	Y	XP	YP
1	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
2	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
3	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
4	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
5	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
6	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
7	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
8	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
9	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
10	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
11	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
12	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
13	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
14	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
15	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
16	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
17	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
18	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
19	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
20	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
21	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
22	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
23	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
24	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
25	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
26	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
27	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
28	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
29	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
30	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
31	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
32	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
33	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
34	06/03/64	12:00	1000000	0	0	0	0	0	0	0	0	0
35	06/03/64	12:00	1000									

QUANTITATIVE NORMAL STATISTICS OF X, Y, Z													CORRELATION - BIVARIATE NORMAL STATISTICS FOR XP AND YD												
X					Y					N			P					D							
MEAN \bar{x}	S.D. σ_x	P (σ_x)	MEAN \bar{y}	S.D. σ_y	N	MEAN \bar{p}	S.D. σ_p	P (σ_p)	MEAN \bar{d}	S.D. σ_d	P (σ_d)	MEAN \bar{xp}	S.D. σ_{xp}	P (σ_{xp})	MEAN \bar{yd}	S.D. σ_{yd}	P (σ_{yd})								
12.89	12.61	1.378	11.1	13.5	500	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21								
MEAN \bar{p}	S.D. σ_p	P (σ_p)	MEAN \bar{d}	S.D. σ_d	P (σ_d)	MEAN \bar{xp}	S.D. σ_{xp}	P (σ_{xp})	MEAN \bar{yd}	S.D. σ_{yd}	P (σ_{yd})	MEAN \bar{xp}	S.D. σ_{xp}	P (σ_{xp})	MEAN \bar{yd}	S.D. σ_{yd}	P (σ_{yd})								
12.89	12.61	1.378	11.1	13.5	500	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21								

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	14.62	8.65	.3863	-.30	9.13	600						13.90	-.29					
12	14.76	8.62	.8106	-.22	9.13		13.91	5.04	.2614	13.91	5.39			13.91	5.04	.2807	13.91	5.39
24	14.88	8.62	.6519	-.23	9.19		13.36	8.53	.1888	13.36	7.15			13.36	8.53	.3138	13.36	7.15
36	15.01	8.64	.5353	-.21	9.21		14.01	7.29	.3084	14.01	7.97			14.01	7.29	.3301	14.01	7.97
48	15.12	8.73	.4553	-.17	9.31		14.05	7.68	.3887	14.05	8.42			14.05	7.68	.3432	14.05	8.42
60	15.27	8.84	.3870	-.16	9.39		14.09	7.97	.4021	14.09	8.64			14.09	7.97	.3574	14.09	8.64
72	15.30	8.84	.3459	-.16	9.42		14.13	8.11	.4048	14.13	8.76			14.13	8.11	.3567	14.13	8.76

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	12.24	7.42	.3477	-.53	7.26	600						11.47	-.60					
12	12.33	7.40	.7539	-.49	7.23		11.59	4.87	.2394	11.59	4.31			11.59	4.87	.1995	11.59	4.31
24	12.47	7.48	.6319	-.47	7.29		11.60	5.74	.1753	11.60	5.59			11.60	5.74	.2678	11.60	5.59
36	12.58	7.50	.5153	-.43	7.32		11.67	6.35	.3339	11.67	6.30			11.67	6.35	.2738	11.67	6.30
48	12.67	7.58	.4626	-.35	7.40		11.69	6.57	.3448	11.69	6.70			11.69	6.57	.2877	11.69	6.70
60	12.74	7.65	.4053	-.33	7.47		11.74	6.78	.3551	11.74	6.89			11.74	6.78	.3006	11.74	6.89
72	12.81	7.66	.3760	-.30	7.47		11.75	6.87	.3614	11.75	6.99			11.75	6.87	.3077	11.75	6.99

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDERBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
12	9.21	6.47	.7552	-76	5.64	.7441	.7441	.3118	3540	8.54	4.24	.1154	-1.02	3.69
24	9.30	6.45	.6447	-72	5.53	.5325	.5325	.3013	3529	8.57	4.95	.1434	-1.05	4.42
36	9.37	6.42	.5549	-68	5.65	.4150	.4150	.3017	3538	8.61	5.39	.1844	-1.05	5.00
48	9.48	6.49	.4852	-60	5.72	.3159	.3159	.3159	2668	8.92	5.66	.2215	-1.05	5.25
60	9.55	6.55	.4531	-56	5.79	.2572	.2572	.3255	2183	8.63	5.75	.2483	-1.01	5.38
72	9.59	6.54	.4203	-50	5.80	.2229	.2229	.3251	1836	8.55	5.87	.2617	-.96	5.44

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
8.45	-.95

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ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
12	6.91	6.05	.2838	-1.03	4.75	.6752	.6752	.2801	3044	6.37	4.00	.1540	-1.26	3.45
24				-1.33	4.73	.5448	.5448	.2778	3305	6.42	4.59	.1530	-1.29	3.88
36				-.95	4.75	.3918	.3918	.2711	2664	6.42	4.92	.1794	-1.27	4.31
48				-.90	4.82	.2678	.2678	.2905	2501	6.44	5.21	.1838	-1.26	4.49
60				-.85	4.88	.2177	.2177	.2960	2129	6.45	5.33	.2121	-1.24	4.57
72				-.85	4.89	.2248	.2248	.2932	2244	6.49	5.51	.2119	-1.26	4.56

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
6.22	-1.24

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (YF,X)	MEAN XP	S.D. XP	R (XF,YP)	MEAN YP	S.D. YP
12	24	5.21	6.05	.7318	-1.38	4.17	.6037	.2967	.3016	.1980	.1980	4.59	4.13	.1455	-1.61	3.26
36	48	5.26	6.03	.6611	-1.33	4.18	.5295	.2787	.2798	.1744	.1744	4.65	4.55	.1780	-1.62	3.47
60	72	5.33	6.09	.5990	-1.29	4.16	.3820	.2712	.2426	.1959	.1959	4.66	4.85	.1847	-1.60	3.78
		5.38	6.09	.5217	-1.22	4.24	.2747	.2902	.2886	.1648	.1648	4.67	5.06	.2082	-1.59	3.93
		5.40	6.07	.4846	-1.21	4.25	.1929	.3030	.2065	.1753	.1753	4.71	5.17	.2199	-1.56	4.02
							.2122	.3025	.2258	.1829	.1829		5.36	.2118	-1.58	3.93

GIVEN X
 GIVEN Y
 4.39 -1.63

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (YF,X)	MEAN XP	S.D. XP	R (XF,YP)	MEAN YP	S.D. YP
12	24	4.37	6.18	.7747	-1.56	3.66	.5492	.2412	.2895	.1914	.1914	3.63	3.90	.0263	-1.76	3.00
36	48	4.41	6.20	.7196	-1.56	3.70	.4557	.2217	.3064	.1342	.1342	3.67	4.29	.0502	-1.77	3.16
60	72	4.43	6.22	.6400	-1.53	3.69	.3194	.2159	.2827	.1490	.1490	3.75	4.74	.0796	-1.75	3.37
		4.46	6.20	.5588	-1.49	3.71	.2504	.2155	.2241	.1193	.1193	3.78	4.92	.1411	-1.72	3.48
		4.42	6.18	.5063	-1.49	3.71	.2043	.2213	.2190	.1485	.1485	3.79	5.12	.1426	-1.72	3.52
							.1995	.2255	.1870	.1370	.1370	3.86	5.32	.1697	-1.69	3.54

GIVEN X
 GIVEN Y
 3.44 -1.76

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STATISTICS OF X, Y, XP, YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATION (1932/14) - VANDENBERG
MONTH OF RECORD - NOVEMBER
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	4.13	6.64	.2406	-1.79	3.60	500								
12	4.16	6.66	.7934	-1.78	3.60	.5202	.3741	.2333	.2721	.1919	3.25	.0405	-1.95	3.02
24	4.16	6.67	.7518	-1.79	3.62	.3741	.2671	.2259	.2693	.1432	3.29	.0506	-1.96	3.25
36	4.14	6.66	.6940	-1.75	3.62	.2671	.1724	.2205	.2186	.1261	3.38	.1391	-1.93	3.42
48	4.08	6.67	.6444	-1.76	3.63	.1724	.1217	.2215	.1755	.1039	3.47	.1786	-1.89	3.51
60	4.07	6.68	.6227	-1.77	3.63	.1217	.0986	.2228	.1309	.1254	3.51	.2078	-1.86	3.55
72	4.02	6.68	.5698	-1.77	3.63	.0986		.2219	.1133	.1271	3.58	.2161	-1.85	3.57

ALTITUDE (KM) - 23

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	4.18	7.17	.2296	-1.70	3.45	500								
12	4.17	7.21	.8393	-1.69	3.48	.4513	.3706	.2242	.2323	.1589	3.08	.0980	-1.81	3.04
24	4.11	7.24	.8064	-1.69	3.48	.3706	.2591	.2209	.2654	.1122	3.16	.0890	-1.81	3.14
36	4.09	7.26	.7501	-1.69	3.48	.2591	.1550	.2150	.2291	.0944	3.26	.1160	-1.82	3.27
48	4.02	7.29	.7134	-1.70	3.48	.1550	.1219	.2108	.2387	.0702	3.35	.1014	-1.82	3.33
60	3.97	7.31	.6859	-1.74	3.47	.1219	.1614	.2083	.1741	.0863	3.42	.1619	-1.78	3.38
72	3.91	7.30	.6439	-1.76	3.47	.1614		.2066	.1676	.0938	3.50	.1707	-1.77	3.37

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X _P	S.D. X _P	R (X,X _P)	MEAN Y _P	S.D. Y _P	R (Y,Y _P)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X,Y)	MEAN X _P	S.D. X _P	R (X _P ,Y _P)	MEAN Y _P	S.D. Y _P	MEAN X	S.D. X	R (X _P ,Y _P)	GIVEN Y	S.D. Y _P
12	4.76	7.96	.8757	-1.34	3.29	.5601	-1.32	3.29	600	4.78	7.94	.2319	3.48	3.83	.3982	-1.46	2.70					
24	4.68	8.01	.8331	-1.35	3.29	.4167							3.61	4.37	.0474	-1.47	2.93					
36	4.63	8.05	.7798	-1.36	3.30	.3109							3.73	4.96	.0241	-1.47	3.04					
48	4.57	8.06	.7458	-1.39	3.29	.2041							3.82	5.25	.0338	-1.47	3.11					
60	4.49	8.06	.7164	-1.38	3.27	.1344							3.91	5.51	.0830	-1.44	3.17					
72	4.40	8.07	.6813	-1.46	3.26	.0804							4.01	5.79	.1017	-1.42	3.20					

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
3.27	-1.46

ALTITUDE (KM) - 25

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (Y,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
12	5.62	8.95	.6947	-1.99	3.48	.5455	.5455	.3087	600	5.71	8.91	.3116	-1.98	3.51	.3087	4.11	3.98	3.83	8.91	3.83	3.51	4.11	3.98	3.83	4.11	3.98
24	5.57	8.98	.6719	-1.01	3.47	.4544	.4544	.3133	600	5.71	8.91	.3116	-1.98	3.51	.3133	4.21	4.34	3.83	8.91	3.83	3.51	4.21	4.34	3.83	4.21	4.34
36	5.47	9.03	.6375	-1.02	3.47	.3110	.3110	.3054	600	5.71	8.91	.3116	-1.98	3.51	.3054	4.36	4.83	3.83	8.91	3.83	3.51	4.36	4.83	3.83	4.36	4.83
48	5.40	9.04	.6094	-1.05	3.47	.2339	.2339	.3040	600	5.71	8.91	.3116	-1.98	3.51	.3040	4.46	5.19	3.83	8.91	3.83	3.51	4.46	5.19	3.83	4.46	5.19
60	5.29	9.04	.7641	-1.05	3.47	.1727	.1727	.3008	600	5.71	8.91	.3116	-1.98	3.51	.3008	4.62	5.70	3.83	8.91	3.83	3.51	4.62	5.70	3.83	4.62	5.70
72	5.17	9.03	.7483	-1.11	3.47	.1396	.1396	.3037	600	5.71	8.91	.3116	-1.98	3.51	.3037	4.72	5.86	3.83	8.91	3.83	3.51	4.72	5.86	3.83	4.72	5.86

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
3.83	-1.25

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X GIVEN Y	R (XP,Y)	S.D. XP GIVEN Y	MEAN YP GIVEN X	S.D. YP GIVEN X
12	24	6.99	10.02	.3818	-.85	3.54	500	6.90	10.06	.9245	-.86	3.53	6.194	.3821	.4231	3.82	2.69
36	48	6.79	10.11	.8936	-.87	3.51		6.79	10.11	.8936	-.87	3.51	.4832	.3808	.4361	.0124	2.35
60	72	6.57	10.25	.8247	-.90	3.50		6.56	10.18	.6590	-.87	3.50	.3768	.4135	5.11	.0944	3.10
		6.46	10.26	.7858	-.92	3.50		6.47	10.25	.3083	-.90	3.50	.3729	.4017	5.62	.1234	3.19
		6.33	10.25	.7629	-.98	3.52		6.33	10.25	.2012	-.92	3.50	.3765	.3632	6.15	.1775	3.29
										.2160	-.98	3.52	.3785	.3357	6.44	.2201	3.32

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

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ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X GIVEN Y	R (XP,Y)	S.D. XP GIVEN Y	MEAN YP GIVEN X	S.D. YP GIVEN X
12	24	8.57	11.45	.4206	-.75	4.00	500	8.45	11.54	.9361	-.73	3.98	.6337	.4176	.4603	4.03	2.97
36	48	8.33	11.59	.9031	-.74	3.94		8.33	11.59	.9031	-.74	3.94	.5219	.4169	.4544	4.90	3.25
60	72	8.19	11.65	.8672	-.78	3.95		8.19	11.65	.8672	-.78	3.95	.3859	.4136	4.505	.0648	3.46
		8.05	11.72	.8353	-.80	3.95		8.05	11.72	.3845	-.80	3.95	.2845	.4052	5.68	.0907	3.59
		7.92	11.73	.8054	-.83	3.97		7.92	11.73	.2445	-.83	3.97	.2445	.4050	6.26	.1524	3.63
		7.74	11.73	.7810	-.90	3.99		7.74	11.73	.2242	-.90	3.99	.2242	.4107	7.12	.1730	3.68
										.2242	-.90	3.99	.2242	.4107	7.12	.2166	3.68

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
11	1/65 - 12/74	0	90.0	.70	2.69	-.5711	-.92	3.11	600
11	1/65 - 12/74	1	90.0	.42	3.83	-.1256	-1.18	6.89	600
11	1/65 - 12/74	2	90.0	2.22	5.19	.0092	-1.04	7.98	600
11	1/65 - 12/74	3	90.0	4.88	6.89	.0524	-1.44	9.22	600
11	1/65 - 12/74	4	90.0	7.45	8.51	.0937	-1.43	10.27	600
11	1/65 - 12/74	5	90.0	9.69	10.28	.1543	-1.34	11.68	600
11	1/65 - 12/74	6	90.0	11.85	11.68	.2371	-1.53	13.60	600
11	1/65 - 12/74	7	90.0	13.78	13.05	.2947	-1.65	15.67	600
11	1/65 - 12/74	8	90.0	15.57	14.45	.3273	-1.70	17.69	600
11	1/65 - 12/74	9	90.0	17.27	15.71	.3727	-1.64	19.22	600
11	1/65 - 12/74	10	90.0	19.06	16.91	.4074	-1.77	20.59	600
11	1/65 - 12/74	11	90.0	20.59	17.40	.4371	-1.34	20.66	600
11	1/65 - 12/74	12	90.0	21.74	16.96	.4380	-.90	19.12	600
11	1/65 - 12/74	13	90.0	21.38	15.16	.4344	-.41	16.42	600
11	1/65 - 12/74	14	90.0	19.89	12.61	.4379	-.11	13.56	600
11	1/65 - 12/74	15	90.0	17.41	10.42	.4373	-.08	11.12	600
11	1/65 - 12/74	16	90.0	14.62	8.63	.3863	-.30	9.13	600
11	1/65 - 12/74	17	90.0	12.24	7.42	.3477	-.53	7.26	600
11	1/65 - 12/74	18	90.0	9.12	6.47	.3127	-.79	5.63	600
11	1/65 - 12/74	19	90.0	6.91	6.05	.2838	-1.05	4.75	600
11	1/65 - 12/74	20	90.0	5.19	6.06	.2919	-1.39	4.14	600
11	1/65 - 12/74	21	90.0	4.37	6.18	.2403	-1.56	3.66	600
11	1/65 - 12/74	22	90.0	4.13	6.64	.2406	-1.79	3.60	600
11	1/65 - 12/74	23	90.0	4.18	7.17	.2296	-1.70	3.45	600
11	1/65 - 12/74	24	90.0	4.78	7.94	.2319	-1.32	3.29	600
11	1/65 - 12/74	25	90.0	5.71	8.91	.3116	-.98	3.51	600
11	1/65 - 12/74	26	90.0	6.99	10.02	.3818	-.65	3.54	600
11	1/65 - 12/74	27	90.0	8.57	11.45	.4206	-.75	4.00	600

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION: (92214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	.40	2.84	-.4916	-1.09	3.20	614						.33	-.96					
12	.41	2.84	-.1328	-1.11	3.20		.40	2.79	-.4845	-1.05	2.98			.40	2.79	-.4845	-1.05	2.98
24	.43	2.84	-.1362	-1.14	3.19		.35	2.64	-.4541	-1.03	3.03			.35	2.64	-.4541	-1.03	3.03
36	.43	2.83	-.1224	-1.15	3.19		.41	2.75	-.4816	-1.08	3.17			.41	2.75	-.4816	-1.08	3.17
48	.43	2.83	-.1334	-1.18	3.18		.37	2.63	-.4655	-1.05	3.13			.37	2.63	-.4655	-1.05	3.13
60	.46	2.82	-.1779	-1.20	3.15		.42	2.79	-.4680	-1.09	3.19			.42	2.79	-.4680	-1.09	3.19
72	.47	2.83	-.1318	-1.23	3.16		.36	2.69	-.4708	-1.05	3.15			.36	2.69	-.4708	-1.05	3.15

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	1.27	4.42	-.0659	-2.63	7.31	614						1.39	-2.33					
12	1.31	4.44	.5353	-2.58	7.31		1.27	3.63	-.0043	-2.37	5.34			1.27	3.63	-.0043	-2.37	5.34
24	1.30	4.46	.2482	-2.75	7.30		1.24	4.20	-.0307	-2.42	6.49			1.24	4.20	-.0307	-2.42	6.49
36	1.29	4.43	.1888	-2.82	7.27		1.25	4.30	-.0475	-2.47	6.97			1.25	4.30	-.0475	-2.47	6.97
48	1.28	4.40	.1092	-2.55	7.27		1.25	4.37	-.0512	-2.48	7.05			1.25	4.37	-.0512	-2.48	7.05
60	1.30	4.37	.0197	-2.93	7.25		1.24	4.40	-.0547	-2.51	7.15			1.24	4.40	-.0547	-2.51	7.15
72	1.30	4.38	-.0642	-2.98	7.24		1.23	4.43	-.0546	-2.54	7.24			1.23	4.43	-.0546	-2.54	7.24

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1932/4) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	3.87	5.74	.0425	-3.59	8.52	614	3.89	4.17	.1598	-3.17	5.53	4.00	-3.15
24	3.88	5.73	.0425	-3.59	8.52	614	3.84	5.04	.1105	-3.24	7.19		
36	3.85	5.73	.0425	-3.59	8.52	614	3.85	5.44	.0695	-3.30	7.81		
48	3.86	5.70	.0425	-3.59	8.52	614	3.85	5.60	.0532	-3.33	8.06		
60	3.85	5.67	.0425	-3.59	8.52	614	3.86	5.68	.0436	-3.36	8.23		
72	3.80	5.71	.0425	-3.59	8.52	614	3.87	5.72	.0423	-3.39	8.35		

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	6.84	7.49	.0952	-4.29	9.88	614	6.90	5.24	.1956	-3.70	6.11	7.02	-3.68
24	6.81	7.45	.0952	-4.29	9.88	614	6.84	5.53	.1432	-3.80	8.16		
36	6.79	7.52	.0952	-4.29	9.88	614	6.85	7.02	.1025	-3.89	8.98		
48	6.71	7.49	.0952	-4.29	9.88	614	6.88	7.26	.0861	-3.92	9.27		
60	6.74	7.44	.0952	-4.29	9.88	614	6.89	7.38	.0815	-3.93	9.42		
72	6.66	7.43	.0952	-4.29	9.88	614	6.89	7.44	.0876	-3.95	9.55		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION 1932(14) - VANCOUVER
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/55 - 12/74
ALTITUDE (M) - 50.0

ALTITUDE (M) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR YP AND YP

DT	HP	MEAN X	S.D. X	R (X,YP)	MEAN YP	S.D. YP	R (Y,XP)	MEAN XP	S.D. XP	MEAN Y	S.D. Y	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
36	48	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
60	72	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
84	96	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
108	120	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
132	144	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
156	168	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
180	192	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
204	216	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
228	240	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
252	264	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
276	288	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
300	312	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
324	336	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
348	360	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
372	384	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
396	408	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
420	432	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
444	456	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
468	480	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
492	504	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
516	528	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41
540	540	9.70	9.34	.7375	-5.00	11.53	.7530	12.32	11.72	-4.88	11.61	-.0775	9.92	6.14	.1353	-4.31	7.41

ALTITUDE (M) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR YP AND YP

DT	HP	MEAN X	S.D. X	R (X,YP)	MEAN YP	S.D. YP	R (Y,XP)	MEAN XP	S.D. XP	MEAN Y	S.D. Y	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
36	48	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
60	72	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
84	96	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
108	120	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
132	144	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
156	168	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
180	192	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
204	216	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
228	240	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
252	264	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
276	288	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
300	312	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
324	336	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
348	360	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
372	384	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
396	408	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
420	432	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
444	456	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
468	480	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
492	504	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
516	528	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52
540	540	12.14	10.31	.7530	-5.24	13.00	.7530	12.32	11.72	-4.72	12.44	-.0775	12.32	7.03	.2525	-4.72	8.52

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION 1932(4) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALTITUDE ANGLE - 90.0

ALTITUDE (KM) - 5

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	P (XP,Y)	P (YP,X)	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
12	14.15	12.41	.7580	-5.82	14.79	.7228	-5.71	14.79	614	.2461	.0335	14.59	7.86	.3048	-5.20	10.15
24	14.06	12.59	.5257	-5.96	14.73	.4819	-5.71	14.79		.2009	-.0280	14.59	10.23	.2622	-5.28	12.89
36	13.91	12.57	.3482	-6.10	14.73	.3265	-5.71	14.79		.1421	-.0343	14.55	11.45	.2440	-5.36	13.95
48	13.83	12.64	.2404	-6.17	14.71	.2400	-5.71	14.79		.1075	.0182	14.55	11.95	.2161	-5.32	14.15
60	13.83	12.60	.1842	-6.17	14.64	.1834	-5.71	14.79		.0805	.0189	14.39	12.17	.2181	-5.33	14.31
72	13.73	12.53	.0657	-6.17	14.62	.1622	-5.71	14.79		.0367	.0146	14.35	12.27	.2242	-5.38	14.51

ALTITUDE (KM) - 7

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	P (XP,Y)	P (YP,X)	MEAN XP	S.D. XP	P (XP,YP)	MEAN YP	S.D. YP
12	16.34	14.01	.2957	-6.17	15.63	.7034	-5.85	15.63	614	.2004	.1291	16.78	9.80	.3402	-5.70	11.75
24	16.34	14.01	.1752	-6.17	15.63	.4815	-5.85	15.63		.1209	.0340	16.69	11.05	.3222	-5.76	12.74
36	16.34	14.01	.1082	-6.17	15.63	.3263	-5.85	15.63		.0843	.0230	16.69	12.38	.3106	-5.86	13.78
48	16.34	14.01	.0782	-6.17	15.63	.2400	-5.85	15.63		.0600	.0182	16.69	13.55	.2820	-5.87	15.22
60	16.34	14.01	.0582	-6.17	15.63	.1834	-5.85	15.63		.0464	.0285	16.69	13.95	.2534	-5.83	16.20
72	16.34	14.01	.0382	-6.17	15.63	.1622	-5.85	15.63		.0368	.0311	16.69	13.97	.2933	-5.90	16.40

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATION (93214) - VANDENBERG
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

STATISTICS OF X, Y, XP, YP
X = U(AT T)
Y = V(AT T)
XP = U(AT T + DT)
YP = V(AT T + DT)

ALTITUDE (KM) - 8

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	18.24	15.73	.7588	-6.44	17.90	.7057	-6.37	18.08	614	18.90	10.06	.3709	-5.81	12.75
24	18.09	15.91	.5169	-6.55	17.79	.4559				18.78	13.22	.3745	-5.94	16.07
36	18.01	15.93	.3416	-6.71	17.80	.3128				19.65	14.58	.3671	-5.04	17.17
48	17.89	15.95	.2342	-6.94	17.77	.2249				18.61	15.14	.3443	-5.00	17.49
60	17.65	15.89	.1593	-7.19	17.84	.1449				18.54	15.40	.3415	-6.01	17.64
72	17.81	15.95	.0910	-7.43	17.92	.0958				18.51	15.51	.3403	-6.06	17.82

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
18.98	-5.72

ALTITUDE (KM) - 9

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	20.20	16.93	.7698	-6.89	19.40	.7250	-6.80	19.62	614	20.97	10.67	.3707	-6.05	13.47
24	20.07	17.12	.5239	-6.98	19.23	.4756				20.82	14.25	.3571	-6.26	17.26
36	19.98	17.22	.3538	-7.09	19.22	.3169				20.69	15.67	.3681	-6.42	18.61
48	19.88	17.22	.2397	-7.36	19.22	.2733				20.52	16.28	.3573	-6.38	18.87
60	19.64	17.15	.1555	-7.63	19.26	.2301				20.55	16.56	.3544	-6.37	19.09
72	19.77	17.23	.1105	-7.60	19.34	.1921				20.53	16.66	.3642	-6.39	19.25

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
21.06	-5.91

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 93.0
 X = U(IAT T)
 Y = V(IAT T)
 XP = U(IAT T + DT)
 YP = V(IAT T + DT)

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	P (X, YP)	MEAN YP	S.D. YP	P (Y, XP)	MEAN XP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	22.05	17.53	.7756	-5.92	20.49	.7470	22.70	.3287	-6.89	20.80	614	22.92	11.03	.3874	-5.97	13.82
24	21.24	17.54	.5324	-5.95	20.24	.4375	22.74	.1933				22.74	14.72	.4289	-5.28	18.04
36	21.81	17.58	.3831	-7.02	20.20	.3343	22.62	.1339				22.62	16.23	.4176	-5.43	13.59
48	21.57	17.36	.2519	-7.29	20.15	.2775	22.53	.0811				22.53	16.91	.4315	-5.48	13.37
60	21.51	17.23	.1745	-7.57	20.14	.2422	22.45	.0778				22.45	17.21	.4331	-5.45	20.17
72	21.56	17.55	.1265	-7.84	20.13	.2132	22.42	.0552				22.42	17.32	.4330	-5.43	20.32

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
23.04	-5.73

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN Y	S.D. Y	P (Y, XP)	MEAN XP	S.D. XP	P (XP, Y)	MEAN YP	R (Y, Y)	MEAN XP	S.D. XP	N	MEAN YP	S.D. YP	R (YP, X)	MEAN XP	S.D. XP
12	23.61	17.02	.3229	-5.81	20.58	.514	24.45	.3102	-5.81	20.58	514	24.45	12.36	.3450	-5.82	13.39
24	23.54	17.17	.7324	-5.92	20.44	.7597	24.27	.1767				24.27	15.01	.3283	-5.01	17.71
36	23.23	17.40	.5531	-5.95	20.24	.5533	24.14	.1339				24.14	15.95	.3345	-5.28	13.53
48	23.28	17.53	.3831	-7.01	20.15	.3343	24.11	.0811				24.11	16.23	.4176	-5.33	13.71
60	23.12	17.56	.2519	-7.20	20.11	.2775	23.97	.0778				23.97	16.55	.4331	-5.27	13.99
72	23.10	17.52	.1745	-7.51	20.07	.2422	23.92	.0552				23.92	15.78	.4330	-5.22	13.97

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
24.60	-5.38

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (192214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PER DO OF RECORD - 1.65 - (2/7)
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 12

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	P (X,Y)	N	GIVEN X	GIVEN Y	S.D. YP	P (XP,YP)	MEAN YP	S.D. YP
24.15	15.54	.3924		-5.34	18.90		514	24.91	-4.35				
12	24.12	15.55	0.51	-6.07	18.90	.7823	3124	24.81	-4.59	9.33	.3428	-4.59	11.77
24	24.13	15.55	.5352	-6.09	18.95	.7778	1758	24.88	-5.21	12.48	.4238	-5.21	11.82
36	24.13	15.55	.4203	-5.13	18.94	.7830	1382	24.89	-5.31	14.08	.4272	-5.31	11.83
48	24.13	15.55	.2343	-5.22	18.94	.7825	1048	24.92	-5.30	14.83	.3353	-5.30	11.83
60	24.13	15.55	21.97	-5.5	18.76	.7812	1383	24.93	-5.33	15.16	.3320	-5.33	11.83
72	24.13	15.55	11.65	-5.73	18.75	.7795	1350	24.93	-5.35	15.32	.3365	-5.35	11.83

ALTITUDE (M) - 12

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	P (X,Y)	N	GIVEN X	GIVEN Y	S.D. YP	P (XP,YP)	MEAN YP	S.D. YP
23.50	13.93	.3874		-4.83	15.23		514	24.24	-3.23				
12	23.48	13.93	0.53	-4.35	15.23	.7823	3122	24.18	-3.44	9.33	.3417	-3.44	11.82
24	23.48	13.93	.5352	-4.37	15.10	.7778	1758	24.18	-3.83	12.48	.4238	-3.83	11.82
36	23.48	13.93	.4203	-4.43	15.10	.7830	1382	24.18	-4.13	14.08	.4272	-4.13	11.83
48	23.48	13.93	.2343	-4.77	15.10	.7825	1048	24.18	-4.25	14.83	.3353	-4.25	11.83
60	23.48	13.93	21.97	-5.23	15.01	.7812	1383	24.18	-4.24	15.16	.3320	-4.24	11.83
72	23.48	13.93	11.65	-5.47	15.00	.7795	1350	24.18	-4.24	15.32	.3365	-4.24	11.83

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (13214) - VANCEBEG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0
 X = U(1, T)
 Y = V(1, T)
 XP = U(1, T + DT)
 YP = V(1, T + DT)

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN X	MEAN GIVEN Y	S.D. GIVEN Y
21.76	11.80	.3968	-3.80	13.99	614							22.52	-2.23		
12	21.75	11.80	.7910	-3.87	13.96	.3501	.3311	.2988	7.22	22.39	8.03				
24	21.75	11.82	.5855	-3.92	13.91	.2335	.2523	.3722	9.57	22.24	11.27				
36	21.75	11.83	.4159	-3.93	13.94	.1329	.2134	.3851	10.77	22.15	12.57				
48	21.83	11.82	.2922	-4.05	13.74	.0822	.1831	.3853	11.25	22.13	13.12				
60	21.94	11.73	.2253	-4.13	13.65	.0735	.1775	.3821	11.44	22.12	13.32				
72	21.50	11.73	.1856	-4.23	13.53	.0538	.1421	.3808	11.53	22.05	13.48				

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN Y	S.D. Y	P (X, Y)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN X	MEAN GIVEN Y	S.D. GIVEN Y
19.40	13.03	.4038	-3.18	11.76	614				20.21	-1.94		
12	18.39	12.10	.7821	-3.23	11.70	.3725	.3318	.2752	8.15	22.05	8.78	
24	19.40	12.12	.5815	-3.23	11.64	.2518	.2582	.3615	9.15	22.02	9.29	
36	19.37	12.11	.4312	-3.26	11.61	.1325	.2154	.3745	9.74	22.03	10.49	
48	19.37	12.11	.3173	-3.46	11.51	.0823	.1831	.3845	10.78	22.03	11.98	
60	19.21	12.05	.2447	-3.62	11.43	.0538	.1624	.3845	10.78	22.03	12.13	
72	18.15	12.07	.2037	-3.73	11.45	.0362	.1420	.3828	10.78	22.03	12.25	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 16

4-71703E (RM) - 17

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
13.11	7.86	.4425	-2.39	8.27	614	13.85	-1.55

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ALTIITUDE (KM) - 18

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X _P	S.D. X _P	R (X, X _P)	MEAN Y _P	S.D. Y _P	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (X _P , Y _P)	S.D. X _P	MEAN X _P	R (Y _P , X _P)	S.D. Y _P
		9.51	6.73				.4795	-2.30	6.34	814	10.21	-1.66					
		MEAN X _P	S.D. X _P	R (X, X _P)	MEAN Y _P	S.D. Y _P	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (X _P , Y _P)	S.D. X _P	MEAN X _P	R (Y _P , X _P)	S.D. Y _P
12		9.45	6.75	.7208	-2.33	6.32		.7558	.4729	.4695	.4246		.1894	4.62	10.10	.4246	4.07
24		9.40	6.74	.5745	-2.36	6.30		.5852	.4755	.4260	.3747		.2871	5.46	10.02	.3747	5.03
36		9.38	6.72	.4341	-2.43	6.30		.4749	.4749	.3550	.3564		.3337	5.78	9.99	.3337	5.00
48		9.31	6.62	.4345	-2.55	6.24		.3836	.4570	.2905	.2953		.3246	6.02	9.97	.2946	5.79
60		9.28	6.56	.3330	-2.63	6.15		.3127	.4504	.2199	.2396		.4333	6.20	9.93	.2396	5.99
72		9.26	6.57	.3372	-2.65	6.15		.2803	.4403	.2117	.2183		.4380	6.32	9.90	.2183	6.05

ALTITUDE (KM) - 19

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	
	6.22	5.09	.46±0	-2.41	4.91	514	6.98	-2.07	
DT HR	MEAN XP	R (X,XP)	MEAN YP	R (Y,YP)	R (XP,Y)	R (YP,X)	S.D. XP	R (XP,YP)	S.D. YP
12	6.20	.7335	-2.42	.7016	.4578	.3820	4.13	.1937	3.39
24	6.17	.6306	-2.47	.5406	.4530	.3302	4.72	.2539	3.96
36	6.17	.5520	-2.51	.4093	.4529	.2903	5.07	.3321	4.35
48	6.11	.4955	-2.61	.3795	.4284	.2523	5.28	.3560	4.51
60	6.09	.5911	-2.69	.2773	.4174	.2126	5.43	.3932	4.64
72	6.07	.3891	-2.75	.2485	.4113	.1829	5.61	.4089	4.68

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	3.96	5.99	.3738	-2.56	4.23				614					
12	3.91	6.00	.7559	-2.53	4.21	.6509	.3782	.4034	.3255	4.49	3.92	.1175	-2.35	3.13
24	3.89	5.99	.6557	-2.63	4.20	.4835	.3813	.4093	.2275	4.43	4.52	.1806	-2.33	3.55
36	3.84	5.99	.5754	-2.66	4.20	.3501	.3793	.3428	.1793	4.40	4.88	.2512	-2.36	3.85
48	3.77	5.88	.4957	-2.73	4.12	.2657	.3543	.2992	.1435	4.38	5.19	.2852	-2.35	3.96
60	3.72	5.86	.4661	-2.79	4.09	.2429	.3317	.2251	.1144	4.37	5.29	.3257	-2.38	4.06
72	3.68	5.87	.4366	-2.82	4.07	.1684	.3241	.1915	.1085	4.37	5.38	.3356	-2.41	4.13

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	1.95	5.99	.2602	-2.71	3.95				614					
12	1.90	5.99	.7630	-2.74	3.92	.6282	.2582	.2757	.2233	2.51	3.87	.0687	-2.58	3.04
24	1.82	5.97	.6514	-2.76	3.88	.4742	.2772	.3372	.1934	2.47	4.55	.0544	-2.53	3.37
36	1.79	5.98	.5804	-2.79	3.88	.3606	.2728	.2812	.1642	2.44	4.98	.1260	-2.54	3.60
48	1.77	5.95	.5332	-2.85	3.85	.2551	.2616	.2464	.1217	2.41	5.07	.1650	-2.55	3.75
60	1.69	5.92	.4762	-2.89	3.84	.1871	.2510	.2031	.1071	2.40	5.27	.1940	-2.56	3.82
72	1.64	5.95	.4374	-2.90	3.84	.1621	.2347	.1856	.1020	2.38	5.39	.2043	-2.57	3.85

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y									
	.45	6.38	.3123	-2.59	3.76		614						-2.55	
12	.36	6.36	.7669	-2.60	3.74	.5603	.3117	.3127	.2507	1.07	4.10	.1291	-2.49	3.07
24	.27	6.38	.6954	-2.63	3.70	.4464	.3335	.3166	.1687	1.08	4.57	.1598	-2.44	3.28
36	.22	6.38	.6508	-2.66	3.69	.3628	.3045	.3139	.1756	1.07	4.84	.1775	-2.44	3.42
48	.22	6.37	.6031	-2.71	3.70	.2579	.2750	.3079	.1380	1.02	5.08	.2070	-2.44	3.55
60	.16	6.39	.5560	-2.72	3.70	.2164	.2101	.2984	.1029	1.01	5.29	.2579	-2.46	3.63
72	.09	6.43	.5047	-2.75	3.72	.1458	.1838	.2835	.0951	.99	5.50	.2662	-2.47	3.68

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y									
	-.30	7.18	.2410	-2.53	3.56		614						-2.57	
12	-.38	7.18	.8155	-2.56	3.57	.5428	.2596	.2370	.2104	.27	4.16	.0428	-2.49	2.95
24	-.46	7.20	.7324	-2.58	3.55	.4343	.2828	.2333	.1349	.27	4.88	.0799	-2.46	3.14
36	-.53	7.19	.7120	-2.60	3.54	.3761	.2641	.2362	.1319	.31	5.04	.1021	-2.45	3.23
48	-.60	7.21	.6610	-2.61	3.55	.2821	.2147	.2346	.0759	.31	5.36	.1645	-2.45	3.39
60	-.67	7.26	.5972	-2.63	3.55	.2168	.1619	.2255	.0657	.29	5.74	.2033	-2.46	3.45
72	-.76	7.31	.5606	-2.64	3.56	.1583	.1334	.2186	.0211	.30	5.90	.2231	-2.47	3.50

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-45	7.71	.2136	-2.77	3.49	614												
12	-54	7.75	.8531	-2.79	3.49		.5123	.2145	.2507	.1940	.12	.1257	-.0164	.12	3.90	-.0164	-2.73	2.95
24	-62	7.76	.8344	-2.79	3.52		.4155	.2064	.2409	.1257	.16	.1257	.0657	.16	4.57	.0657	-2.72	3.12
36	-74	7.76	.7593	-2.82	3.51		.3658	.2048	.2309	.0935	.21	.0935	.1008	.21	4.99	.1008	-2.70	3.20
48	-84	7.82	.6378	-2.82	3.51		.2541	.2051	.1907	.0535	.23	.0535	.1199	.23	5.48	.1199	-2.71	3.33
60	-92	7.88	.6425	-2.87	3.52		.2058	.1346	.1817	.0353	.21	.0353	.1532	.21	5.88	.1532	-2.69	3.37
72	-1.01	7.91	.5890	-2.85	3.53		.1877	.1834	.1389	.0056	.21	.0056	.1912	.21	6.18	.1912	-2.71	3.40

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
.13	-2.79

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-70	8.55	.2615	-2.56	3.52	614												
12	-79	8.58	.8838	-2.61	3.53		.5725	.2603	.2895	.2450	.17	.1725	-.0066	.17	4.00	-.0066	-2.52	2.83
24	-93	8.62	.8118	-2.61	3.54		.4724	.2491	.2920	.1725	.10	.1725	.0721	.10	4.98	.0721	-2.50	3.03
36	-1.04	8.67	.7575	-2.61	3.54		.4059	.2485	.2638	.1276	.05	.1276	.1432	.05	5.55	.1432	-2.49	3.16
48	-1.14	8.71	.6959	-2.63	3.54		.3122	.2473	.2438	.0695	.03	.0695	.1798	.03	6.07	.1798	-2.49	3.29
60	-1.22	8.78	.6479	-2.63	3.55		.2511	.2378	.2257	.0374	.03	.0374	.1949	.03	6.43	.1949	-2.48	3.35
72	-1.32	8.85	.5948	-2.61	3.56		.2449	.2338	.2112	.0064	.02	.0064	.2155	.02	6.77	.2155	-2.49	3.36

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
-.19	-2.59

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		-39	9.89	.3004	-2.54	3.94	614	.06	4.44	.1011	-2.53	3.05
12		-.52	9.96	.8934	-2.58	3.95		.13	5.50	.1527	-2.51	3.32
24		-.64	10.02	.8304	-2.59	3.95		.17	6.33	.1797	-2.49	3.45
36		-.74	10.03	.7667	-2.61	3.98		.19	6.95	.2058	-2.47	3.62
48		-.83	10.12	.7068	-2.65	3.99		.23	7.43	.2158	-2.46	3.73
60		-.92	10.18	.6510	-2.66	4.00		.21	7.83	.2332	-2.46	3.77
72		-1.02	10.26	.6000	-2.66	4.01						

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		-39	9.89	.3004	-2.54	3.94	614	.06	4.44	.1011	-2.53	3.05
12		-.52	9.96	.8934	-2.58	3.95		.13	5.50	.1527	-2.51	3.32
24		-.64	10.02	.8304	-2.59	3.95		.17	6.33	.1797	-2.49	3.45
36		-.74	10.03	.7667	-2.61	3.98		.19	6.95	.2058	-2.47	3.62
48		-.83	10.12	.7068	-2.65	3.99		.23	7.43	.2158	-2.46	3.73
60		-.92	10.18	.6510	-2.66	4.00		.21	7.83	.2332	-2.46	3.77
72		-1.02	10.26	.6000	-2.66	4.01						

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		.55	11.72	.3440	-2.71	4.54	614	.82	4.55	.1182	-2.67	3.22
12		.46	11.76	.9216	-.6911	3.49		.92	5.62	.1581	-2.65	3.72
24		.32	11.82	.8668	-.5463	3.465		.97	6.91	.1925	-2.64	3.90
36		.23	11.88	.8051	-.4823	3.504		.99	7.75	.2212	-2.63	4.04
48		.14	11.91	.7454	-.4148	3.565		1.02	8.43	.2481	-2.62	4.23
60		.04	11.97	.6855	-.3059	3.583		1.02	9.05	.2678	-2.62	4.29
72		-.04	12.05	.6236	-.2655	3.588						

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (33214) - VANDERBERG

X = U/IAT T)
Y = V/IAT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N
12	1/55	0	90.0	1.40	2.84	-1.316	-1.03	3.20	614
12	1/55	1	90.0	1.27	4.42	-1.559	-2.63	7.31	614
12	1/55	2	90.0	3.87	5.74	-1.725	-3.53	8.52	614
12	1/55	3	90.0	6.84	7.49	-1.952	-4.23	9.88	614
12	1/55	4	90.0	9.70	9.34	-1.901	-4.89	11.61	614
12	1/55	5	90.0	12.14	10.91	-1.522	-5.24	13.00	614
12	1/55	6	90.0	14.29	12.22	-1.235	-5.71	14.73	614
12	1/55	7	90.0	16.38	14.01	-1.237	-6.17	16.23	614
12	1/55	8	90.0	18.38	15.59	-1.447	-6.37	18.03	614
12	1/55	9	90.0	20.34	17.77	-1.720	-6.80	19.82	614
12	1/55	10	90.0	22.18	17.43	-1.333	-6.23	20.23	614
12	1/55	11	90.0	23.51	17.02	-1.323	-5.81	18.50	614
12	1/55	12	90.0	24.15	15.54	-1.374	-5.34	16.23	614
12	1/55	13	90.0	24.78	13.93	-1.374	-4.80	15.23	614
12	1/55	14	90.0	24.78	11.90	-1.333	-4.18	13.93	614
12	1/55	15	90.0	24.78	10.03	-1.113	-3.75	11.75	614
12	1/55	16	90.0	24.78	8.33	-1.113	-3.27	9.81	614
12	1/55	17	90.0	24.78	7.33	-1.235	-2.77	8.27	614
12	1/55	18	90.0	24.78	6.33	-1.500	-2.41	6.41	614
12	1/55	19	90.0	24.78	5.33	-1.500	-2.16	5.16	614
12	1/55	20	90.0	24.78	4.33	-1.500	-2.71	3.95	614
12	1/55	21	90.0	24.78	3.33	-1.500	-2.59	3.16	614
12	1/55	22	90.0	24.78	2.33	-1.500	-2.53	2.16	614
12	1/55	23	90.0	24.78	1.33	-1.500	-2.77	1.16	614
12	1/55	24	90.0	24.78	0.33	-1.500	-2.55	0.16	614
12	1/55	25	90.0	24.78	0.33	-1.500	-2.55	0.16	614
12	1/55	26	90.0	24.78	0.33	-1.500	-2.55	0.16	614
12	1/55	27	90.0	24.78	0.33	-1.500	-2.55	0.16	614

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
HR													
12	-0.00	4.27	-0.7388	.00	3.50	620	.25	1.93	-0.5473	-.33	2.94	.41	-.57
24	.01	3.11	-0.5415	.01	3.77		.23	2.43	-.5488	-.31	2.85		
36	.00	4.62	-.8007	.00	4.44		.23	1.73	-.5041	-.33	2.62		
48	-.02	3.49	-.6064	.01	4.28		.23	2.29	-.5274	-.32	2.67		
60	-.04	4.71	-.8141	.01	4.59		.21	1.67	-.4792	-.33	2.55		
72	-.04	3.53	-.6124	.02	4.53		.20	2.28	-.5169	-.32	2.59		

ALTITUDE (KM) - 1

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
HR													
12	1.08	4.34	.0402	-1.55	7.07	620	.87	3.69	.0710	-.44	6.37	.91	-1.66
24	-.02	4.10	-.4844	-.3931	-.0351		.74	3.42	-.0829	-.52	5.88		
36	-.01	5.08	-.6010	-.5380	-.0120		.66	3.32	-.1294	-.61	5.56		
48	-.02	5.44	-.6408	-.6127	-.0748		.63	3.30	-.0244	-.62	5.42		
60	-.07	5.55	-.6470	-.6374	-.0794		.62	3.23	-.0094	-.58	5.37		
72	-.13	5.78	-.6633	-.6441	-.0457		.60	3.24	-.0450	-.57	5.30		

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF A, Y, XP, YP
 STATION 1932(4) - VANDERBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 2

QUADRI-VARIATE NORMAL STATISTICS OF A, Y, XP, YP

	MEAN Y	S.D. Y	P (Y, Y)	MEAN Y	S.D. Y	P (Y, Y)	N
	3.57	5.87	.1187	-2.61	7.75		920
	MEAN YP	S.D. YP	P (Y, YP)	MEAN YP	S.D. YP	P (Y, YP)	
DT	12	4.32	-.3784	21	5.56	-.3533	1574
16	12	5.53	-.5517	25	7.31	-.5138	1559
20	11	5.24	-.5591	25	9.24	-.5745	1564
25	11	5.21	-.5581	25	9.24	-.5745	1564
30	11	5.21	-.5581	25	9.24	-.5745	1564
35	11	5.21	-.5581	25	9.24	-.5745	1564
40	11	5.21	-.5581	25	9.24	-.5745	1564
45	11	5.21	-.5581	25	9.24	-.5745	1564
50	11	5.21	-.5581	25	9.24	-.5745	1564
55	11	5.21	-.5581	25	9.24	-.5745	1564
60	11	5.21	-.5581	25	9.24	-.5745	1564
65	11	5.21	-.5581	25	9.24	-.5745	1564
70	11	5.21	-.5581	25	9.24	-.5745	1564

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR YP AND YP

	MEAN Y	S.D. Y	P (Y, Y)	MEAN YP	S.D. YP	P (YP, YP)	MEAN YP	S.D. YP	P (YP, YP)

ALTITUDE (M) - 2

QUADRI-VARIATE NORMAL STATISTICS OF A, Y, XP, YP

	MEAN Y	S.D. Y	P (Y, Y)	MEAN Y	S.D. Y	P (Y, Y)	N
	5.33	7.80	.1357	-3.33	8.73		920
	MEAN YP	S.D. YP	P (Y, YP)	MEAN YP	S.D. YP	P (Y, YP)	
DT	12	5.33	-.3784	21	5.56	-.3533	1574
16	12	5.53	-.5517	25	7.31	-.5138	1559
20	11	5.24	-.5591	25	9.24	-.5745	1564
25	11	5.21	-.5581	25	9.24	-.5745	1564
30	11	5.21	-.5581	25	9.24	-.5745	1564
35	11	5.21	-.5581	25	9.24	-.5745	1564
40	11	5.21	-.5581	25	9.24	-.5745	1564
45	11	5.21	-.5581	25	9.24	-.5745	1564
50	11	5.21	-.5581	25	9.24	-.5745	1564
55	11	5.21	-.5581	25	9.24	-.5745	1564
60	11	5.21	-.5581	25	9.24	-.5745	1564
65	11	5.21	-.5581	25	9.24	-.5745	1564
70	11	5.21	-.5581	25	9.24	-.5745	1564

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR YP AND YP

	MEAN Y	S.D. Y	P (Y, Y)	MEAN YP	S.D. YP	P (YP, YP)	MEAN YP	S.D. YP	P (YP, YP)

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4									
QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP									
DT	HR	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y
		8.78	9.49	.2055	-3.61	9.76	620		
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y
								8.19	-3.27
12		.06	6.12	-.3339	.01	7.17	-.3769	.0877	.1671
24		.11	8.43	-.4712	.07	9.81	-.5148	.0889	.1194
36		.21	9.53	-.6263	.04	11.25	-.5840	.0763	.0757
48		.18	10.32	-.5669	.07	11.91	-.6211	.0666	.0753
60		.06	10.82	-.5894	.14	12.32	-.6444	.0563	.0778
72		-.05	11.49	-.6196	.23	12.56	-.6555	.0577	.0470
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y
								8.19	-3.27
12		.06	6.12	-.3339	.01	7.17	-.3769	.0877	.1671
24		.11	8.43	-.4712	.07	9.81	-.5148	.0889	.1194
36		.21	9.53	-.6263	.04	11.25	-.5840	.0763	.0757
48		.18	10.32	-.5669	.07	11.91	-.6211	.0666	.0753
60		.06	10.82	-.5894	.14	12.32	-.6444	.0563	.0778
72		-.05	11.49	-.6196	.23	12.56	-.6555	.0577	.0470

ALTITUDE (KM) - 5									
QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP									
DT	HR	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y
		11.10	11.12	.2550	-3.45	10.98	620		
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y
								10.45	-3.17
12		.07	6.95	-.3272	.03	8.25	-.3336	.2181	.1017
24		.12	9.54	-.4571	.10	11.23	-.5266	.2062	.0489
36		.21	10.93	-.6170	.10	12.87	-.5957	.1752	.0187
48		.17	11.85	-.5648	.19	13.57	-.6376	.1641	.0278
60		.06	12.60	-.5939	.27	13.73	-.6489	.1360	.0434
72		-.08	13.34	-.6229	.38	13.91	-.6581	.1287	.0170
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y
								10.45	-3.17
12		.07	6.95	-.3272	.03	8.25	-.3336	.2181	.1017
24		.12	9.54	-.4571	.10	11.23	-.5266	.2062	.0489
36		.21	10.93	-.6170	.10	12.87	-.5957	.1752	.0187
48		.17	11.85	-.5648	.19	13.57	-.6376	.1641	.0278
60		.06	12.60	-.5939	.27	13.73	-.6489	.1360	.0434
72		-.08	13.34	-.6229	.38	13.91	-.6581	.1287	.0170

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (33214) - VANZENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT	12.92	12.55	.2757	-3.64	12.22	620	7.75	11.73	.2730	1.31	11.25
12							7.75	11.73	.2730	1.31	11.25
24							7.75	11.73	.2730	1.31	11.25
36							7.75	11.73	.2730	1.31	11.25
48							7.75	11.73	.2730	1.31	11.25
60							7.75	11.73	.2730	1.31	11.25
72							7.75	11.73	.2730	1.31	11.25

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
DT	12.22	-3.34
12		
24		
36		
48		
60		
72		

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ALTITUDE (M) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT	14.83	13.96	.2816	-4.15	13.44	620	8.80	13.93	.2855	.93	12.15
12							8.80	13.93	.2855	.93	12.15
24							8.80	13.93	.2855	.93	12.15
36							8.80	13.93	.2855	.93	12.15
48							8.80	13.93	.2855	.93	12.15
60							8.80	13.93	.2855	.93	12.15
72							8.80	13.93	.2855	.93	12.15

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
DT	13.93	-3.78
12		
24		
36		
48		
60		
72		

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CIVIL SERVICE RECORDS

Year	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

• 22 •

2017-2018

2000-01-01 to 2000-01-01

Year	Mean	St. Dev.	Mean	St. Dev.	Year	Mean	St. Dev.
1922	17.23	5.00	22.75	3.45	1934	19.00	3.00
1923	18.00	4.00	23.00	3.00	1935	19.00	3.00
1924	18.00	4.00	23.00	3.00	1936	19.00	3.00
1925	18.00	4.00	23.00	3.00	1937	19.00	3.00
1926	18.00	4.00	23.00	3.00	1938	19.00	3.00
1927	18.00	4.00	23.00	3.00	1939	19.00	3.00
1928	18.00	4.00	23.00	3.00	1940	19.00	3.00
1929	18.00	4.00	23.00	3.00	1941	19.00	3.00
1930	18.00	4.00	23.00	3.00	1942	19.00	3.00
1931	18.00	4.00	23.00	3.00	1943	19.00	3.00
1932	18.00	4.00	23.00	3.00	1944	19.00	3.00
1933	18.00	4.00	23.00	3.00	1945	19.00	3.00

245

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X _F	S.D. X _F	R (X,X _F)	MEAN Y _F	S.D. Y _F	R (X,Y)	MEAN Y	S.D. Y	N	R (Y,X)	MEAN X _P	S.D. X _P	R (X _P ,Y)	MEAN Y _P	S.D. Y _P
								</							

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 24.60
 -5.11

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	R (YP, X)	MEAN YP	S.D. YP
	24.33	15.40	.2651	-4.64	13.34	620									-4.45			23.95			
12	.03	7.97	-.2507	-.01	9.24	-3495	.1391	-.0697	-.0340	12.09	14.87	.2739	-3.29	12.50							
24	.07	11.33	-.3785	-.02	14.20	-5317	.2090	-.1079	-.0905	12.18	14.25	.2784	-2.33	11.30							
36	.20	13.71	-.4533	-.04	16.71	-6272	.2259	-.1210	-.1284	12.50	13.72	.2795	-1.91	10.39							
48	.27	14.34	-.4970	.07	17.80	-6595	.2232	-.1103	-.1475	12.56	13.35	.2884	-1.47	9.89							
60	.30	15.97	-.5276	.23	19.07	-6327	.2101	-.0959	-.1582	12.73	13.06	.2939	-1.27	9.73							
72	.23	17.27	-.5650	.31	19.11	-6352	.1819	-.0517	-.1426	12.68	12.68	.3101	-1.59	9.71							

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 23.95
 -4.45

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.06	6.95	-.2667	-.01	7.84	.1712	-.3468	.1712	-.0112	-.0875	620	11.83	12.84	.3159	-.23	10.64	22.28	11.36	.1115	-.1747	.1675	620	22.28	-4.01	11.83	12.84	.3159	-.23	10.64
24	.13	9.57	-.3659	.02	11.99	.2471	-.5278	.2471	-.0793	-.1283	620	11.79	12.40	.3212	-.60	9.63						620			11.79	12.40	.3212	-.60	9.63
36	.25	11.53	-.4381	.02	14.10	.2708	-.6211	.2708	-.1225	-.1553	620	11.86	11.98	.3214	-.37	8.89						620			11.86	11.98	.3214	-.37	8.89
48	.35	12.72	-.4831	.14	15.16	.2763	-.6695	.2763	-.1331	-.1732	620	11.92	11.82	.3260	-.87	8.42						620			11.92	11.82	.3260	-.87	8.42
60	.40	13.86	-.5212	.26	15.47	.2447	-.6848	.2447	-.1115	-.1747	620	12.07	11.37	.3420	-.83	8.25						620			12.07	11.37	.3420	-.83	8.25
72	.35	14.96	-.5597	.35	15.35	.2153	-.6825	.2153	-.0996	-.1675	620	12.04	11.04	.3555	-1.03	8.29						620			12.04	11.04	.3555	-1.03	8.29

247

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.06	6.03	-.2854	-.04	6.80	.1256	-.3438	.1256	.0104	-.0834	620	10.14	10.52	.3357	.06	9.25	19.54	19.54	.1945	-.0843	.1535	620	19.54	-3.68	10.14	10.52	.3357	.06	9.25
24	.12	7.86	-.3695	-.03	10.00	.1754	-.5045	.1754	-.0231	-.1155	620	10.19	10.20	.3520	-.01	8.50						620			10.19	10.20	.3520	-.01	8.50
36	.20	9.40	-.4387	-.03	11.93	.2057	-.6057	.2057	-.0755	-.1297	620	10.18	9.87	.3625	-.62	7.84						620			10.18	9.87	.3625	-.62	7.84
48	.28	10.57	-.4913	.05	12.92	.2062	-.6555	.2062	-.0301	-.1358	620	10.20	9.56	.3784	-.78	7.43						620			10.20	9.56	.3784	-.78	7.43
60	.34	11.59	-.5341	.15	13.28	.1951	-.6769	.1951	-.0843	-.1455	620	10.33	9.28	.3910	-.75	7.25						620			10.33	9.28	.3910	-.75	7.25
72	.36	12.39	-.5658	.21	13.33	.1945	-.6828	.1945	-.0912	-.1535	620	10.37	9.02	.3907	-.89	7.22						620			10.37	9.02	.3907	-.89	7.22

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1932/4) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	.07	5.29	-.2853	-.00	5.40	-.3281	-.1332	.0151	620	8.90	9.00	.3725	.18	7.82
36	48	.17	6.75	-.3649	-.00	7.97	-.4802	.2097	-.0322		8.84	8.74	.3834	.08	7.25
60	72	.22	8.24	-.4413	-.01	9.59	-.5779	.2327	-.0792		8.83	8.43	.3942	-.42	6.75
		.25	9.04	-.4860	.04	10.36	-.6263	.2321	-.0339		8.75	8.21	.4104	-.53	6.45
		.25	9.91	-.5311	.12	10.70	-.6481	.2338	-.0889		8.87	7.95	.4144	-.41	6.29
		.25	10.63	-.5715	.18	10.89	-.6822	.2384	-.1036		8.82	7.70	.4165	-.55	6.20

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
16.71	-3.36

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	.02	5.35	-.3313	.01	4.57	-.3464	.0463	.0579	620	7.15	7.71	.3544	-.15	6.21
36	48	.11	6.06	-.3770	-.01	6.29	-.4736	.1239	.0324		7.16	7.56	.3752	-.03	5.82
60	72	.17	7.15	-.4403	-.00	7.43	-.5617	.1563	-.0116		7.17	7.34	.3869	-.42	5.47
		.19	7.79	-.4803	.03	8.11	-.6136	.1455	-.0049		7.16	7.16	.4095	-.39	5.22
		.22	8.50	-.5213	.04	8.37	-.6344	.1615	-.0340		7.18	6.97	.4095	-.63	5.12
		.24	9.09	-.5570	.09	8.55	-.6506	.1682	-.0440		7.18	6.78	.4167	-.68	5.03

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
13.46	-3.10

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (1932/4) - VANDERBERG
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR YP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
9.91	6.99	.3286	-2.93	5.40	620							10.02	-3.10		
12	.05	4.36	-3.55	3.81	.0232	.0826	-3.493	3.81	.0232	.0826	.0231	6.61	.3711	-2.29	5.03
24	.14	5.09	-3.621	4.80	.1029	.1072	-4.375	4.80	.1029	.1072	.1352	6.48	.3779	-.08	4.81
36	.16	5.85	-4.142	5.64	.1252	.0502	-5.177	5.64	.1252	.0502	.1435	6.33	.3877	-.22	4.58
48	.21	6.49	-4.533	6.22	.1197	.0328	-5.717	6.22	.1197	.0328	.1475	6.18	.4069	-.49	4.33
60	.23	7.08	-4.935	.07	.1230	.0046	-6.023	6.54	.1230	.0046	.1353	6.04	.4152	-.72	4.23
72	.27	7.55	-5.354	.10	.1320	-.0195	-6.231	6.82	.1320	-.0195	.1357	5.83	.4238	-.87	4.19

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR YP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
6.80	6.60	.3645	-2.90	4.74	620							6.88	-3.09		
12	.05	4.38	-3.551	3.43	.1639	.0098	-3.557	3.43	.1639	.0098	.1010	6.23	.3922	-.81	4.42
24	.12	4.81	-3.486	4.10	.2206	.0137	-4.263	4.10	.2206	.0137	.1557	6.16	.3923	-.53	4.25
36	.14	5.44	-3.923	4.81	.2006	-.0152	-5.036	4.81	.2006	-.0152	.1402	6.05	.4135	-.81	4.08
48	.18	5.92	-4.211	5.25	.1985	-.0184	-5.484	5.25	.1985	-.0184	.1500	5.97	.4249	-.79	3.94
60	.19	6.40	-4.572	5.62	.2013	-.0426	-5.895	5.62	.2013	-.0426	.1475	5.85	.4357	-.90	3.81
72	.22	6.87	-4.932	.09	.2136	-.0641	-6.107	5.80	.2136	-.0641	.1537	5.73	.4419	-.96	3.74

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.10	4.09	-.2833	.01	3.11	-.3749	-.4228	.1215	620	2.22	6.50	.3384	-1.12	3.79
24	.16	4.70	-.3234	.00	3.47	-.4228	-.4678	.0623		2.70	6.39	.3395	-.88	3.67
36	.20	5.28	-.3595	-.01	4.04	-.4678	-.5094	.0512		2.47	6.33	.3467	-1.07	3.55
48	.23	5.83	-.3985	.03	4.44	-.5361	-.5821	.021		2.49	6.21	.3529	-1.06	3.43
60	.25	6.36	-.4380	.06	4.67	-.5677	-.6107	.0021		2.35	6.10	.3580	-1.14	3.36
72	.28	6.64	-.4543	.04	4.91	-.5987	-.6436	-.0036		2.37	6.05	.3632	-1.14	3.27

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
3.91	-3.07

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.06	4.22	-.2940	.01	3.21	-.4138	-.4627	.0762	620	1.05	6.58	.2802	-1.35	3.50
24	.12	4.81	-.3304	.02	3.61	-.4627	-.5041	.1306		1.23	6.50	.3008	-1.32	3.40
36	.17	5.29	-.3616	.02	3.90	-.5041	-.5456	.0711		1.18	6.42	.2937	-1.32	3.32
48	.19	5.77	-.3971	.04	4.18	-.5456	-.5824	.0549		1.18	6.32	.2984	-1.32	3.24
60	.24	6.14	-.4199	.06	4.43	-.5824	-.6291	-.0102		1.11	6.26	.2842	-1.34	3.18
72	.29	6.56	-.4472	.06	4.74	-.6091	-.6546	-.0236		1.13	6.17	.2910	-1.33	3.05

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
1.95	-3.01

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
	.08	7.34	.2616	-2.99	3.77	620										
12	.05	4.09	-.2610	-.3854	-.0016		.06	7.08	.2927	-1.45	3.48					
24	.13	4.70	-.2983	-.4651	.0015		.15	7.00	.3077	-1.44	3.33					
36	.19	5.32	-.3320	-.4970	.0685		.18	6.92	.3005	-1.46	3.27					
48	.22	6.04	-.3774	-.5377	.1131		.22	6.79	.2984	-1.45	3.17					
60	.28	6.59	-.4144	-.5633	.2009		.18	6.57	.2770	-1.45	3.10					
72	.35	7.09	-.4494	-.5930	.1938		.17	6.55	.2853	-1.45	3.02					

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 .35
 -3.07

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
	-1.06	8.10	.3076	-3.02	3.85	620										
12	.07	4.18	-.2424	-.4029	-.0395		-.68	7.85	.3516	-1.50	3.52					
24	.15	5.00	-.2870	-.4560	.0504		-.51	7.75	.3528	-1.51	3.42					
36	.23	5.78	-.3264	-.4918	.1032		-.46	7.65	.3525	-1.50	3.35					
48	.29	6.48	-.3719	-.5415	.1535		-.50	7.51	.3536	-1.50	3.23					
60	.34	7.18	-.4205	-.5753	.2069		-.55	7.35	.3458	-1.50	3.15					
72	.42	7.78	-.4579	-.6033	.2359		-.61	7.20	.3423	-1.50	3.07					

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 -.69
 -3.04

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JANUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

..... ALTITUDE (KM) - 24

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	P (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	-1.45	9.28	.3578	-2.84	4.17	620														
HR																				
12	.08	4.51	-.2339	-.3328	3.33		.02	3.33	-.3328	.0874	-.0038	-.0296				-.91	9.02	.3935	-1.43	3.84
24	.19	5.41	-.2706	-.4373	3.71		.01	3.71	-.4373	.1286	-.0071	-.0542				-.75	8.91	.3933	-1.44	3.75
36	.27	6.32	-.3156	-.4778	4.07		.03	4.07	-.4778	.1821	-.0431	-.0732				-.76	8.80	.4028	-1.43	3.66
48	.35	7.26	-.3744	-.5167	4.40		.05	4.40	-.5167	.2218	-.0834	-.0925				-.82	8.60	.4067	-1.41	3.57
60	.38	8.24	-.4270	-.5635	4.83		.06	4.83	-.5635	.2579	-.1332	-.0925				-.90	8.39	.4100	-1.39	3.43
72	.46	8.83	-.4573	-.6001	5.11		.07	5.11	-.6001	.2905	-.1688	-.0952				-.97	8.24	.4089	-1.39	3.34

..... CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-.89				
	-2.89				

..... ALTITUDE (KM) - 25

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	P (XP, YP)	R (XP, Y)	R (YP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
DT	-1.78	10.43	.3599	-2.63	4.38	620														
HR																				
12	.07	5.01	-.2275	-.3733	3.30		.03	3.30	-.3733	-.0618	.0553	-.0025				-1.12	10.21	.4089	-1.42	4.06
24	.13	5.11	-.2750	-.4155	3.77		.04	3.77	-.4155	.0924	.0021	-.0353				-1.14	10.08	.4079	-1.42	3.98
36	.27	7.23	-.3353	-.4554	4.16		.05	4.16	-.4554	.1763	-.0645	-.0535				-1.19	9.90	.4056	-1.41	3.90
48	.26	8.30	-.3793	-.4947	4.56		.08	4.56	-.4947	.2113	-.0989	-.0614				-1.22	9.70	.4127	-1.40	3.80
60	.41	9.17	-.4243	-.5516	5.04		.09	5.04	-.5516	.2446	-.1427	-.0744				-1.24	9.49	.4191	-1.38	3.65
72	.50	9.92	-.4622	-.5907	5.36		.07	5.36	-.5907	.2845	-.1765	-.0817				-1.24	9.23	.4226	-1.38	3.53

..... CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	GIVEN X	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-1.03				
	-2.51				

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (19214) - VANDENBERG
MONTH OF RECORD - JANUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	R (YP,X)	MEAN YP	S.D. YP
12	.11	4.87	-.2011	.03	3.46	-.3558	-2.89	4.71	620	-.73	-2.68	.4199	-1.06	11.32	-.0169	-1.61	4.39
24	.23	6.23	-.2581	.09	3.90	-.3890						.4256	-1.07	11.16	-.0792	-1.61	4.33
36	.32	7.53	-.3180	.13	4.44	-.4449						.4254	-1.09	10.96	-.0656	-1.57	4.21
48	.44	8.88	-.3633	.16	4.97	-.5017						.4338	-1.06	10.77	-.0819	-1.54	4.07
60	.52	9.62	-.4038	.19	5.39	-.5452						.4248	-1.13	10.56	-.1014	-1.52	3.95
72	.61	10.31	-.4356	.19	5.74	-.5848						.4239	-1.14	10.39	-.1061	-1.51	3.82

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	R (YP,X)	MEAN YP	S.D. YP
12	.11	4.97	-.1829	.08	3.54	-.3274	-3.12	5.11	620	.14	-2.83	.4738	-.73	12.68	-.0311	-1.71	4.81
24	.25	6.65	-.2428	.13	4.24	-.3931						.4867	-.51	12.50	-.0740	-1.66	4.57
36	.36	7.96	-.2977	.16	4.72	-.4365						.4897	-.56	12.30	-.0951	-1.64	4.38
48	.50	9.15	-.3402	.17	5.24	-.4895						.4893	-.52	12.12	-.1291	-1.61	4.43
60	.59	10.26	-.3857	.21	5.72	-.5354						.4911	-.63	11.90	-.1351	-1.61	4.31
72	.68	10.99	-.4159	.25	6.00	-.5667						.4897	-.66	11.73	-.1446	-1.59	4.21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
1	1/65 - 12/74	0	90.0	.42	2.89	-.5137	-.62	3.43	620
1	1/65 - 12/74	1	90.0	1.08	4.34	.0402	-1.55	7.07	620
1	1/65 - 12/74	2	90.0	3.57	5.87	.1187	-2.61	7.75	620
1	1/65 - 12/74	3	90.0	6.38	7.80	.1907	-3.33	8.73	620
1	1/65 - 12/74	4	90.0	8.78	9.49	.2065	-3.61	9.76	620
1	1/65 - 12/74	5	90.0	11.10	11.12	.2550	-3.45	10.98	620
1	1/65 - 12/74	6	90.0	12.32	12.55	.2757	-3.64	12.22	620
1	1/65 - 12/74	7	90.0	14.83	13.96	.2816	-4.15	13.44	620
1	1/65 - 12/74	8	90.0	16.68	15.65	.2816	-4.50	14.69	620
1	1/65 - 12/74	9	90.0	18.76	17.22	.2709	-5.02	15.81	620
1	1/65 - 12/74	10	90.0	21.08	18.60	.2601	-5.39	16.99	620
1	1/65 - 12/74	11	90.0	23.75	19.45	.2412	-5.41	17.23	620
1	1/65 - 12/74	12	90.0	25.09	18.34	.2201	-5.26	16.01	620
1	1/65 - 12/74	13	90.0	24.33	15.40	.2651	-4.64	13.34	620
1	1/65 - 12/74	14	90.0	22.60	13.34	.3028	-4.10	11.36	620
1	1/65 - 12/74	15	90.0	19.77	10.99	.3158	-3.62	9.87	620
1	1/65 - 12/74	16	90.0	16.77	9.41	.3510	-3.11	8.29	620
1	1/65 - 12/74	17	90.0	13.49	8.19	.3274	-2.97	6.65	620
1	1/65 - 12/74	18	90.0	9.91	6.93	.3285	-2.93	5.40	620
1	1/65 - 12/74	19	90.0	6.80	6.60	.3646	-2.90	4.74	620
1	1/65 - 12/74	20	90.0	3.81	6.60	.2914	-2.85	4.05	620
1	1/65 - 12/74	21	90.0	1.79	6.90	.2322	-2.91	3.85	620
1	1/65 - 12/74	22	90.0	.08	7.34	.2616	-3.93	3.77	620
1	1/65 - 12/74	23	90.0	-1.08	8.10	.3076	-3.02	3.65	620
1	1/65 - 12/74	24	90.0	-1.45	9.28	.3578	-2.64	4.17	620
1	1/65 - 12/74	25	90.0	-1.78	10.49	.3599	-2.63	4.38	620
1	1/65 - 12/74	26	90.0	-1.63	11.56	.3777	-2.89	4.71	620
1	1/65 - 12/74	27	90.0	-1.01	12.50	.4350	-3.12	5.11	620

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANCEMBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. YP	R (X, XP)	MEAN YP	S.D. XP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. XP	R (XP, YP)	MEAN XP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. XP	S.D. YP
12	.01	4.62	-.7517	.01	3.68	-.5165	-.5098	.2927	584	.35	2.01	-.6226	.35	2.01	.77	-1.02	-.27	2.01	2.98
24	.03	3.36	-.5423	.01	3.76	-.5099	-.4370	.3232		.37	2.55	-.5628	.37	2.55			-.26	2.55	2.99
36	.03	4.89	-.7321	.02	4.35	-.5337	-.5340	.3681		.36	1.86	-.5837	.36	1.86			-.27	1.86	2.78
48	.05	3.43	-.5519	.02	4.26	-.5733	-.4838	.3197		.36	2.52	-.5722	.36	2.52			-.27	2.52	2.84
60	.13	4.83	-.7328	-.04	4.63	-.6297	-.5457	.3535		.33	1.86	-.5806	.33	1.86			-.31	1.86	2.71
72	.17	3.58	-.5758	-.08	4.31	-.5853	-.5203	.3028		.40	2.50	-.5631	.40	2.50			-.33	2.50	2.83

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. YP	R (X, XP)	MEAN YP	S.D. XP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. XP	R (XP, YP)	MEAN XP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. XP	S.D. YP
12	.02	4.41	-.5038	.10	5.52	-.3679	-.4369	.1992	584	.51	3.55	-.2324	.51	3.55	.23	-2.37	-.51	3.55	6.74
24	.04	5.25	-.5291	.14	7.57	-.4369	-.4369	.2811		.41	3.50	-.1924	.41	3.50			-.52	3.50	6.24
36	.05	5.71	-.6513	.20	8.72	-.5714	-.1883	.2482		.30	3.13	-.1771	.30	3.13			-.52	3.13	5.96
48	.15	6.00	-.6245	.15	9.23	-.6100	-.2307	.2491		.31	3.09	-.1533	.31	3.09			-.56	3.09	5.79
60	.22	6.11	-.6331	.05	9.27	-.6126	-.2073	.2085		.30	3.05	-.1620	.30	3.05			-.59	3.05	5.80
72	.33	6.02	-.6323	-.07	9.32	-.6241	-.1944	.1884		.31	3.09	-.1503	.31	3.09			-.64	3.09	5.74

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
2.24	5.25	-1.143	-2.42	8.58	554							2.18	-2.40
DT YP	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	P (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	P (XP,YP)	S.D. YP
12	-0.1	4.80	-1.423	.13	6.03	-1.343	-1.072	.2233	-.2532	1.74	4.54	-.1337	7.83
24	.02	5.32	-1.523	.15	6.47	-1.470	-1.070	.2218	-.1522	1.49	4.26	-.1281	7.26
36	.02	6.15	-1.642	.23	6.75	-1.549	-1.083	.2209	-.0356	1.33	4.05	-.1231	7.04
48	.10	7.04	-1.845	.42	7.42	-1.819	-1.137	.2110	-.0255	1.37	3.97	-.0879	6.84
60	.20	7.23	-1.927	.14	7.61	-1.821	-1.149	.1522	-.0448	1.36	3.89	-.0885	6.90
72	.32	7.09	-1.852	.22	7.77	-1.618	-1.140	.1636	-.0337	1.40	3.98	-.0522	6.70

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
4.96	6.60	-1.019	-2.87	9.70	554							4.83	-3.15
DT YP	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	P (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	P (XP,YP)	S.D. YP
12	.10	5.26	-1.383	.11	6.57	-1.374	-.071	.2192	-.2713	3.45	5.23	-.0230	8.87
24	.02	6.37	-1.518	.17	6.97	-1.711	-.070	.1933	-.1211	3.11	5.47	-.0211	8.33
36	.02	7.59	-1.690	.27	7.78	-1.825	-.070	.1827	-.1130	2.90	5.18	-.0272	8.00
48	.13	8.54	-1.832	.34	8.04	-1.855	-.0576	.1581	-.0813	2.85	5.05	-.0230	7.78
60	.24	9.40	-1.940	.48	8.24	-1.951	-.0512	.1395	-.0447	2.84	5.03	-.0240	7.68
72	.41	8.83	-1.845	.63	8.50	-1.624	-.0430	.1140	-.0314	2.90	5.04	.0203	7.57

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VALDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.01	6.27	-.3873	.14	7.64	-.3485	-3.14	10.85	554	4.70	7.17	-.0130	1.42	9.28
24	.05	8.41	-.5173	.20	10.83	-.4882	-3.14	10.85	554	4.41	6.71	.0085	.39	3.25
36	.02	9.66	-.5383	.31	12.22	-.5504	-3.14	10.85	554	4.19	6.33	.0301	-.08	8.90
48	.13	10.31	-.6231	.39	13.07	-.5251	-3.14	10.85	554	4.18	6.24	.0626	-.49	8.71
60	.23	10.52	-.6233	.35	13.62	-.5124	-3.14	10.85	554	4.23	6.23	.0547	-.72	8.53
72	.51	10.58	-.6276	.32	13.93	-.6313	-3.14	10.85	554	4.33	6.25	.0657	-.80	8.38

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
7.33	-3.39

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ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.05	7.04	-.3686	.15	8.55	-.3606	-3.18	11.80	554	5.73	8.54	-.0401	1.67	10.75
24	.08	9.55	-.5034	.19	12.07	-.5010	-3.18	11.80	554	5.53	7.98	.0414	.54	10.01
36	.07	10.98	-.5791	.25	13.82	-.5585	-3.18	11.80	554	5.38	7.56	.0484	-.01	9.65
48	.25	11.85	-.6057	.27	14.33	-.5935	-3.18	11.80	554	5.47	7.43	.0738	-.52	9.45
60	.45	12.18	-.6115	.23	14.86	-.6123	-3.18	11.80	554	5.57	7.41	.0835	-.81	9.29
72	.72	12.45	-.6173	.8	15.12	-.6253	-3.18	11.80	554	5.74	7.37	.0841	-.82	9.16

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
9.45	-3.45

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X.Y.XP.YP

ALTIITUDE (KM) - 7QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN X _F	S.D. X _F	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN X _F	S.D. X _F	R (X _F ,Y _F)	MEAN Y _F	S.D. Y _F	DT HP
12	13.87	12.12	.1126	-3.38	14.21	564	13.59	-3.64	7.79	11.23	.1381	1.44	12.96	
12	8.93	3.55	11.08	-3.854	-.0109	.1416			7.70	10.40	.1410	.86	11.86	
12	12.29	4.383	15.35	-.0471	.1124	.1489			7.59	9.85	.1334	-.06	11.45	
12	11.18	5.750	16.90	-.5833	.0885	.0491			7.53	9.64	.1528	-.54	11.13	
12	15.20	6.030	17.89	-.6170	.0502	.0421			7.83	9.55	.1703	-.77	10.98	
12	15.69	5.169	18.29	-.6319	.0475	.0287			7.99	9.39	.1862	-.75	10.80	
12	15.23	6.326	18.66	-.6460	.0341	.0689								

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
DT PR	16.25	13.67	.1636	-3.75	15.40	564						15.91	-4.06
12	.08	9.32	.3555	.11	12.24		.3945	.0963	.0725	9.05	12.70	.1795	1.12
24	.09	13.68	.5333	.19	16.80		.5404	.1378	.0375	8.83	11.70	.1829	.42
36	.08	16.13	.6988	.30	18.69		.5929	.1556	-.0115	8.74	11.03	.1806	-.58
48	.25	17.19	.8090	.36	19.78		.6313	.1193	-.0168	8.83	10.82	.1930	-.75
60	.52	17.82	.8870	.34	20.05		.6419	.1039	-.0151	9.00	10.64	.2181	-.93
72	.85	18.40	.9424	.31	20.33		.6516	.0928	-.0370	9.22	10.46	.2325	-.90

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
DT PR	18.84	15.55	.1818	-4.15	16.52	554						18.27	-4.71
12	.08	11.07	.3505	.12	13.11		.3952	.1187	.0090	9.37	14.49	.1989	-.15
24	.09	15.39	.5243	.22	18.10		.5450	.1553	-.0102	9.85	13.40	.2054	-.14
36	.07	18.06	.6988	.33	20.41		.5828	.1587	-.0406	9.67	12.58	.2142	-.82
48	.18	19.26	.8105	.48	21.44		.6408	.1304	-.0435	9.95	12.64	.2336	-.93
60	.47	20.07	.8814	.49	21.88		.6513	.1193	-.0436	10.07	11.93	.2533	-1.07
72	.77	20.81	.9557	.46	22.00		.6536	.1140	-.0371	10.28	11.68	.2550	-1.07

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (X,XP)	R (X,Y)	R (XP,Y)	R (XP,X)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	21.43	17.56	.2338	-4.34	17.44	564	.09	13.37	-.3208	.1535	-.0656	-.0405	10.55	16.42	.2281	-1.87	10.55	16.42	.2281	-1.87	16.13
24							.23	18.68	-.5348	.1846	-.0916	-.0793	10.79	15.28	.2231	-1.53	10.79	15.28	.2231	-1.53	14.74
36							.35	21.50	-.6128	.1813	-.1070	-.0856	10.77	14.26	.2552	-1.56	10.77	14.26	.2552	-1.56	13.78
48							.45	22.53	-.6433	.1525	-.1041	-.0758	10.84	13.74	.2750	-1.59	10.84	13.74	.2750	-1.59	13.35
60							.47	23.31	-.6579	.1427	-.0957	-.0635	10.92	13.34	.2826	-1.64	10.92	13.34	.2826	-1.64	13.14
72							.33	23.43	-.6525	.1426	-.0866	-.0745	11.23	13.01	.3242	-1.55	11.23	13.01	.3242	-1.55	13.12

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (X,XP)	R (X,Y)	R (XP,Y)	R (XP,X)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24.40	18.63	.2311	-4.08	17.10	564	.35	12.50	-.3532	.1339	-.0937	-.0293	11.81	17.51	.2504	-3.13	11.81	17.51	.2504	-3.13	15.92
24							.16	17.96	-.5223	.1806	-.1334	-.0317	11.90	16.35	.2578	-2.59	11.90	16.35	.2578	-2.59	14.56
36							.32	21.04	-.6125	.1834	-.1448	-.0535	12.17	15.33	.2750	-2.20	12.17	15.33	.2750	-2.20	13.55
48							.41	22.42	-.6469	.1710	-.1328	-.0548	12.23	14.61	.3134	-1.89	12.23	14.61	.3134	-1.89	13.04
60							.39	23.03	-.6595	.1505	-.1225	-.0653	12.25	14.03	.3105	-1.80	12.25	14.03	.3105	-1.80	12.85
72							.27	23.20	-.6614	.1580	-.1115	-.0802	12.54	13.73	.3138	-1.59	12.54	13.73	.3138	-1.59	12.82

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	MEAN XP	R (XP, YP)	MEAN YP	S.D. YP
12	25.28	17.26	.2387	-3.50	15.75	564	25.48	-4.52	16.38	12.67	.2559	-4.22	14.75
24	.16	10.53	.03	10.84	.1124	-.1147	.0375	15.38	12.73	.2567	-2.94	13.55	
36	.26	15.25	.13	15.01	.2037	-.1662	-.0259	14.49	13.19	.2655	-1.83	12.59	
48	.35	18.60	.27	18.20	.2226	-.1628	-.0739	13.74	13.37	.2881	-1.47	12.04	
60	.41	20.75	.30	20.70	.1937	-.1446	-.0830	13.28	13.37	.3067	-1.38	11.81	
72	.51	21.74	.26	21.30	.1832	-.1324	-.0823	12.93	13.51	.3045	-1.24	11.76	
84	.77	22.43	.23	21.43	.1942	-.1321	-.1000						

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ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	25.44	14.65	.2665	-2.88	13.26	564	24.44	-3.73	13.93	.2971	-4.74	12.51
24	.13	8.54	-.2924	-.3175	.0567	-.1160	.0913		12.36	.2952	-2.86	11.61
36	.25	12.18	-.4118	-.4782	.2032	-.1637	-.0058		12.64	.3039	-1.76	10.86
48	.31	14.83	-.5024	-.5728	.2297	-.1672	-.0584		12.95	.3246	-1.07	10.35
60	.38	16.81	-.5656	-.6249	.2112	-.1350	-.0852		13.29	.3262	-.72	10.09
72	.53	17.83	-.6039	-.6492	.2327	-.1324	-.1174		13.42	.3251	-.53	9.97
84	.66	18.64	-.6338	-.6591	.2313	-.1286	-.1406		13.55			

ALTITUDE (M) - 14

ALTITUDE (M) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	
	20.49	10.09	.2340	2.43	9.69	564	19.98	-3.09	
	MEAN XP	S.D. XP	MEAN YP	R (Y,YP)	R (XP,YP)	R (YP,X)	S.D. XP	MEAN -P	S.D. YP
DT	.09	8.18	.05	-.3235	.0083	.0205	9.64	.2675	9.17
HR	.19	8.07	.11	-.4520	.1057	-.0141	9.33	.2742	8.60
	.26	7.94	.18	-.5532	.1611	-.0450	9.00	.2770	8.07
	.23	10.57	.15	-.6030	.1742	.0840	8.72	.2837	7.68
	.27	11.34	.14	-.6335	.1972	-.0718	8.46	.2795	7.48
	.36	12.12	.08	-.6503	.1975	-.1394	8.19	.2880	7.34

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (Y,YP)	R (XP,YP)	R (YP,X)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	17.55	8.52	.2630	-2.22	8.40	564								17.37	-2.81
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	S.D. YP		
12	.06	5.46	-.3150	.04	5.44	-.3255	.0847	-.0045	-.0350	9.13	8.08	.2895	7.94		
24	.15	6.72	-.3803	.07	7.74	-.4612	.1496	-.0318	-.0730	9.39	7.88	.2957	7.45		
36	.16	7.83	-.4507	.11	9.33	-.5505	.1945	-.0573	-.1131	9.38	7.60	.2998	7.00		
48	.19	8.79	-.4992	.11	10.19	-.5964	.1956	-.0517	-.1316	9.48	7.37	.3125	6.72		
60	.25	9.40	-.5324	.10	10.77	-.6282	.2142	-.0558	-.1535	9.57	7.20	.3176	6.50		
72	.32	9.97	-.5529	.07	11.06	-.6453	.2171	-.0595	-.1644	9.63	7.03	.3214	6.38		

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
	14.25	7.29	.2425	-2.26	6.81	564						14.35	-2.71	
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.08	5.14	-.3335	.03	4.58	-.3368	.1105	.1105	-.0980	7.91	6.86	.2577	.22	6.40
24	.12	5.82	-.3671	.06	6.02	-.4414	.0945	.0945	-.1182	8.14	6.75	.2672	.59	6.08
36	.15	6.93	-.4390	.08	7.26	-.5249	.1545	.1545	-.1510	8.13	6.52	.2689	.51	5.76
48	.16	7.40	-.4677	.09	7.97	-.5711	.1566	.1566	-.1599	8.14	6.41	.2815	.63	5.54
60	.19	8.00	-.5101	.08	8.50	-.6074	.1763	.1763	-.1666	8.04	6.24	.2855	.43	5.36
72	.21	8.22	-.5256	.06	8.83	-.6272	.1592	.1592	-.1564	7.98	6.18	.3051	.41	5.25

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KHI) - 18

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.09	4.79	-.3534	.00	3.78	-.3417	-.3417	.1022	584	10.58	6.32	10.77	5.89	.2717	-.23	5.15
24	.17	5.38	-.4045	.04	4.83	-.4372	-.4372	.1380				5.80	5.73	.2912	-.26	4.90
36	.13	5.98	-.4493	.04	5.42	-.4865	-.4865	.1077				5.80	5.61	.3006	-.01	4.77
48	.13	6.33	-.4759	.04	5.99	-.5354	-.5354	.1053				5.89	5.51	.2972	-.25	4.59
60	.15	6.83	-.5129	.03	6.44	-.5728	-.5728	.1082				5.89	5.37	.3162	-.26	4.44
72	.20	7.12	-.5314	-.01	6.71	-.5966	-.5966	.0741				5.88	5.32	.3187	.02	4.36

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
10.77	-2.67

ALTITUDE (KHI) - 19

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.06	3.95	-.3334	.01	3.22	-.3669	-.3669	.0723	584	7.35	5.90	7.60	5.55	.2945	-.38	4.13
24	.05	4.59	-.3926	.06	3.75	-.4252	-.4252	.1252				3.89	5.40	.3262	-.20	4.00
36	.06	5.13	-.4317	.07	4.16	-.4734	-.4734	.1181				3.86	5.29	.3379	-.20	3.89
48	.05	5.47	-.4618	.08	4.54	-.5087	-.5087	.1077				3.93	5.20	.3468	-.15	3.79
60	.06	5.99	-.4990	.09	4.91	-.5512	-.5512	.1068				3.95	5.08	.3572	-.19	3.67
72	.07	6.22	-.5159	.06	5.11	-.5713	-.5713	.0720				3.94	5.03	.3593	-.27	3.62

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
7.60	-2.64

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (193214) - VANDENBERG
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. YP
12	4.62	6.05	.2503	-2.11	3.83	564								
24														
36														
48														
60														
72														

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. YP
12	2.46	6.28	.2192	-2.00	3.50	564								
24														
36														
48														
60														
72														

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. Y ²
12	1.13	6.72	.1556	-2.29	3.32	584	1.90	-2.45	

AL TITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - FEBRUARY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	GIVEN X	MEAN Y	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	.07	7.71	.1225	-1.97	3.50	564							1.30	-1.96					
12	-.03	4.09	-.2735	-.4172	.0206	.0248	-.0325	7.41	.1323	-.44	3.17	-.44	7.41	-.91		7.41	.1323	-.91	3.17
24	-.02	4.40	-.2333	-.4700	.0515	.0719	-.1037	7.34	.1231	-.18	3.06	-.18	7.34	-.83		7.34	.1231	-.83	3.06
36	-.01	4.54	-.3194	-.5234	.0569	.0445	-.0820	7.29	.1283	-.35	2.97	-.35	7.29	-.86		7.29	.1283	-.86	2.97
48	.01	5.11	-.3225	-.5886	.0803	.0326	-.0920	7.20	.1273	-.35	2.85	-.35	7.20	-.85		7.20	.1273	-.85	2.85
60	.08	5.49	-.3223	-.5821	.0628	.0407	-.0836	7.16	.1305	-.28	2.81	-.28	7.16	-.84		7.16	.1305	-.84	2.81
72	.13	5.88	-.3224	-.6124	.0348	.0493	-.0759	7.11	.1413	-.26	2.75	-.26	7.11	-.83		7.11	.1413	-.83	2.75

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN X	GIVEN X	MEAN Y	GIVEN Y	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-.13	8.56	.1103	-1.90	3.57	564							1.40	-1.88					
12	.03	3.92	-.2418	-.4189	-.0463	.0254	-.0011	8.30	.1273	-.80	3.24	-.80	8.30	-.93		8.30	.1273	-.93	3.24
24	.05	4.34	-.2387	-.4831	.0271	.0761	-.0739	8.22	.1176	-.51	3.11	-.51	8.22	-.80		8.22	.1176	-.80	3.11
36	.07	4.63	-.2367	-.5134	.0338	.0813	-.0737	8.15	.1218	-.53	3.04	-.53	8.15	-.79		8.15	.1218	-.79	3.04
48	.07	5.18	-.2392	-.5709	.0544	.0439	-.0728	8.03	.1183	-.53	2.92	-.53	8.03	-.82		8.03	.1183	-.82	2.92
60	.14	5.65	-.2346	-.5967	.0321	.0574	-.0735	8.04	.1222	-.51	2.85	-.51	8.04	-.81		8.04	.1222	-.81	2.85
72	.18	6.06	-.2348	-.6250	.0172	.0580	-.0656	8.01	.1323	-.51	2.78	-.51	8.01	-.80		8.01	.1323	-.80	2.78

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - FEBRUARY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
HR											
12	.00	4.20	-.2233	-.4196	-.0114	.0050	-.67	9.42	.1624	-.86	3.65
24	.02	4.69	-.2480	-.4867	-.0117	.0844	-.42	9.34	.1641	-.70	3.50
36	.01	5.07	-.2700	-.5251	-.0251	.0474	-.47	9.29	.1609	-.72	3.41
48	-.04	5.70	-.3059	-.5759	.0837	-.0039	-.54	9.18	.1525	-.74	3.28
60	.04	6.11	-.3134	-.5966	.0837	-.0053	-.45	9.16	.1525	-.72	3.22
72	.04	6.52	-.3251	-.6302	.0813	-.0083	-.46	9.13	.1618	-.69	3.12
	.40	9.66	.1468	-1.80	4.02	564					
										2.18	-1.81

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
HR											
12	.00	4.75	-.2198	-.4099	-.0139	.0134	-.17	11.02	.1657	-.79	4.00
24	-.01	5.25	-.2364	-.4740	.0507	.0303	-.00	10.97	.1628	-.64	3.85
36	-.01	5.90	-.2594	-.5273	.0773	.0236	.07	10.90	.1602	-.61	3.71
48	-.05	6.68	-.2924	-.5752	.0844	.0057	.04	10.79	.1605	-.62	3.58
60	.01	7.15	-.2976	-.5867	.1044	-.0285	.12	10.78	.1555	-.66	3.55
72	.01	7.53	-.3070	-.6127	.0828	-.0299	.07	10.75	.1700	-.66	3.46
	1.58	11.30	.1503	-1.69	4.38	564					
										3.49	-1.70

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KP	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
2	1/65 - 12/74	1	90.0	.63	3.05	-.5499	-.78	3.49	564
2	1/65 - 12/74	1	90.0	.23	4.28	-.1941	-1.60	7.38	564
2	1/65 - 12/74	1	90.0	2.24	5.25	-.1149	-2.02	8.58	564
2	1/65 - 12/74	1	90.0	4.96	6.60	-.0159	-2.87	9.70	564
2	1/65 - 12/74	1	90.0	7.48	8.05	.0041	-3.14	10.85	564
2	1/65 - 12/74	1	90.0	9.70	9.39	.0215	11.80	11.80	564
2	1/65 - 12/74	1	90.0	11.69	10.59	.0738	12.91	12.91	564
2	1/65 - 12/74	1	90.0	13.87	12.12	.1126	14.21	14.21	564
2	1/65 - 12/74	1	90.0	16.25	13.67	.1636	15.40	15.40	564
2	1/65 - 12/74	1	90.0	18.84	15.55	.1818	16.52	16.52	564
2	1/65 - 12/74	1	90.0	21.43	17.55	.2131	17.44	17.44	564
2	1/65 - 12/74	1	90.0	24.40	18.63	.2311	17.10	17.10	564
2	1/65 - 12/74	1	90.0	26.28	17.26	.2397	15.75	15.75	564
2	1/65 - 12/74	1	90.0	25.44	14.65	.2555	13.26	13.26	564
2	1/65 - 12/74	1	90.0	23.55	12.55	.2398	11.53	11.53	564
2	1/65 - 12/74	1	90.0	20.49	10.09	.2340	9.69	9.69	564
2	1/65 - 12/74	1	90.0	17.53	8.52	.2030	8.40	8.40	564
2	1/65 - 12/74	1	90.0	14.25	7.29	.2425	6.81	6.81	564
2	1/65 - 12/74	1	90.0	10.58	6.32	.2277	5.49	5.49	564
2	1/65 - 12/74	1	90.0	4.62	5.05	.2503	4.45	4.45	564
2	1/65 - 12/74	1	90.0	2.46	3.28	.2192	3.83	3.83	564
2	1/65 - 12/74	1	90.0	1.13	3.72	.1556	3.50	3.50	564
2	1/65 - 12/74	1	90.0	.34	7.08	.1576	3.29	3.29	564
2	1/65 - 12/74	1	90.0	.07	7.71	.1225	3.50	3.50	564
2	1/65 - 12/74	1	90.0	-.13	8.56	.1103	3.57	3.57	564
2	1/65 - 12/74	1	90.0	.40	9.66	.1468	4.02	4.02	564
2	1/65 - 12/74	1	90.0	1.58	11.30	.1503	4.38	4.38	564

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.00	4.43	-.7978	-.01	3.95	-.5706	1.83	2.78	-.5733	-1.84	3.48	620	.94	1.67	-.6231	-.88	2.86
24	-.03	2.77	-.4932	.00	3.76	-.5491							.92	2.42	-.6228	-.86	2.91
36	-.01	4.67	-.6327	.01	4.75	-.7002							.92	1.53	-.5455	-.85	2.49
48	-.01	3.05	-.5374	.01	4.46	-.6573							.93	2.34	-.5780	-.85	2.62
60	-.02	4.68	-.6343	.03	4.94	-.7264							.92	1.53	-.5188	-.85	2.39
72	-.03	3.04	-.5381	.02	4.49	-.6558							.91	2.34	-.5830	-.88	2.60

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.01	3.97	-.4368	-.04	5.06	-.4105	1.13	4.00	-.0862	-3.35	6.35	620	1.37	3.35	-.1022	-1.38	5.68
24	-.07	4.76	-.5327	-.07	6.92	-.5647							1.10	3.12	-.1101	-1.40	5.15
36	-.02	5.12	-.6322	-.05	8.12	-.6677							.99	3.04	-.1003	-1.46	4.67
48	-.03	5.26	-.5567	-.04	8.53	-.6933							.91	2.98	-.0792	-1.48	4.51
60	-.03	5.29	-.6278	-.03	8.78	-.7190							.85	2.96	-.0721	-1.49	4.40
72	-.10	5.36	-.6743	-.05	8.67	-.7118							.78	2.94	-.0750	-1.52	4.46

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATISTICS OF X, Y, XP, YP
STATION (93°14') - VANDENBERG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL
FC XP AND YP

TISTICS

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	-0.05	4.29	-0.397	.01	5.53	-0.3803	-3.30	7.48	620	2.45	4.37	-0.693	-1.60	6.80
24	-0.12	5.25	-0.504	.04	8.08	-0.5506				2.07	4.13	-0.060	-1.81	6.07
36	-0.14	6.05	-0.6156	.05	9.42	-0.6007				1.93	3.90	-0.071	-1.67	5.96
48	-0.13	5.23	-0.6449	.05	10.05	-0.6226				1.82	3.80	-0.048	-1.24	5.31
60	-0.10	6.57	-0.6913	.05	10.22	-0.7093				1.78	3.65	-0.059	-1.33	5.25
72	-0.22	6.60	-0.6974	.02	10.07	-0.7015				1.74	3.62	-0.0104	-1.37	5.32

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

TISTICS

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	-0.06	4.93	-0.3735	-0.01	6.32	-0.3785	-3.51	8.53	620	3.76	6.03	-0.038	-1.30	7.81
24	-0.13	6.02	-0.4874	.02	8.97	-0.5395				3.55	5.73	-0.067	-1.64	7.09
36	-0.13	7.60	-0.5666	.05	10.47	-0.6322				3.39	5.33	-0.076	-1.02	6.55
48	-0.12	7.99	-0.6053	-0.01	11.14	-0.6693				3.27	5.26	-0.028	-1.30	6.31
60	-0.13	8.37	-0.6411	-0.03	11.22	-0.6698				3.19	5.08	-0.073	-1.51	6.33
72	-0.19	8.61	-0.6569	-0.08	11.10	-0.6593				3.15	5.00	-0.022	-1.64	6.42

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (53214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	R (Y,X)	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	8.62	8.39	.0439	-3.52	9.74	620							8.30	-3.32
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.08	6.00	-.3584	-.03	7.28	-.3754	.1443	.0905	-.1978	5.23	7.74	.0218	-.24	8.92
24	-.14	8.24	-.4902	.01	10.42	-.5432	.1230	.0710	-.1876	4.88	7.23	.0103	-.37	8.07
36	-.17	9.41	-.5589	.02	12.02	-.6280	.0859	.0340	-.1347	4.65	6.92	.0122	-1.02	7.53
48	-.14	10.03	-.6015	-.03	12.78	-.6694	.0533	.0195	-.1028	4.55	6.68	.0137	-1.38	7.22
60	-.14	10.48	-.6330	-.07	12.88	-.6512	.0263	.0138	-.0787	4.48	6.48	.0200	-1.64	7.30
72	-.21	10.73	-.6509	-.13	12.76	-.6449	.0147	-.0011	-.0603	4.39	6.36	.0181	-1.88	7.44

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X _P	S.D. X _P	S.D. (X,X _P)	MEAN Y _P	R (X,Y _P)	S.D. Y _P	MEAN Y	S.D. Y	N	R (Y _P ,X)	R (X _P ,Y)	GIVEN X	GIVEN Y	MEAN Y _P	S.D. Y _P
	11.05		10.20		.0475		-3.60	11.04	620			10.73	-3.35		

QUACRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (1932(14)) - VANDENBERG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUACRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
12	24	13.19	11.69	.0894	-3.81	12.21	620

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (XP,YP)	MEAN X	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	-0.07	8.47	-.3637	-0.4	9.86	-.4038	.1614	7.03	10.84	.0759	-0.91	11.17
36	48	-0.09	11.69	-.5117	.04	13.85	-.5572	.1699	7.04	10.01	.0548	-1.07	10.02
60	72	-0.12	13.37	-.5749	.06	15.69	-.6453	.1418	6.84	9.54	.0509	-1.32	9.31
		-0.08	14.10	-.6122	.04	15.81	-.6351	.0913	6.84	9.22	.0681	-1.55	8.89
		-0.09	14.41	-.6334	.05	15.83	-.6782	.0320	6.72	9.03	.0684	-1.82	8.97
		-0.16	14.86	-.6593	.04	16.43	-.6537	.0349	6.56	8.77	.0610	-2.06	9.24

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
12.76	-3.58

ALTITUDE (KM) - 7

QUACRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
12	24	15.20	13.05	.1553	-4.11	13.73	620

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (XP,YP)	MEAN X	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	-0.07	9.34	-.3636	-0.02	11.33	-.4090	.2074	7.86	12.16	.1234	-1.52	12.52
36	48	-0.09	13.03	-.5117	.07	15.73	-.5720	.2359	7.93	11.30	.0373	-1.40	11.25
60	72	-0.05	14.83	-.5735	.10	17.70	-.6479	.2069	7.94	10.71	.0931	-1.50	10.44
		-0.02	15.55	-.6059	.07	19.08	-.6317	.1534	7.86	10.37	.1112	-1.62	9.90
		-0.02	15.91	-.6275	.10	19.22	-.6893	.1387	7.72	10.16	.1133	-1.91	9.94
		-0.01	16.38	-.6522	.11	18.80	-.6693	.1362	7.59	9.89	.1034	-2.18	10.20

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
14.87	-3.80

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	17.17	14.48	.1792	-4.39	15.17	620								
24														
36														
48														
60														
72														

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	19.07	15.33	.2137	-4.65	16.56	620								
24														
36														
48														
60														
72														

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	P (YP, X)	MEAN YP	S.D. YP
12	.06	10.66	-.3244	.03	14.33	-.4062	-4.66	17.35	620	11.01	14.79	.2106	-.0931	-4.08	15.84
24	.08	14.89	-.4633	.03	20.12	-.5749				11.21	13.83	.1784	-.1578	-3.07	14.20
36	.20	17.18	-.5775	.03	23.03	-.6600				11.18	13.19	.1697	-.1640	-3.14	13.53
48	.30	18.23	-.6737	-.03	24.56	-.7015				11.17	12.74	.1650	-.1677	-3.14	12.53
60	.30	19.21	-.6742	.02	24.44	-.6937				11.16	12.34	.1711	-.1722	-2.97	12.52
72	.26	19.66	-.6734	.05	24.02	-.6875				10.91	12.04	.1633	-.1585	-2.23	12.59

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
21.06	-4.14

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ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	P (X, YP)	MEAN YP	S.D. YP	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	P (YP, X)	MEAN YP	S.D. YP
12	.03	9.63	-.3240	-.02	12.92	-.3924	-4.44	16.60	620	11.44	14.31	.2081	-.0928	-5.83	15.11
24	.04	13.80	-.4394	-.03	19.50	-.5514				11.63	13.52	.1800	-.1008	-4.68	14.30
36	.10	16.01	-.5193	-.05	21.77	-.6612				11.53	12.66	.1537	-.1426	-4.05	12.53
48	.17	17.33	-.6654	-.08	23.37	-.6997				11.47	12.42	.1457	-.1470	-3.70	11.83
60	.20	18.15	-.6965	-.02	23.41	-.7019				11.41	12.03	.1576	-.1491	-3.48	11.80
72	.11	18.67	-.6217	.01	23.03	-.6914				11.50	11.80	.1585	-.1435	-3.43	11.97

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
23.52	-3.96

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	25.02	13.84	.1946	-3.56	15.06	620				25.08	-3.27					
12	.01	8.46	-.2881	.00	10.60	-.3452	.2518	-.2105	.0252	11.69	.1858	11.69	13.18	.1858	-8.00	14.00
24	.00	12.16	-.4244	-.05	16.24	-.5317	.2941	-.2672	-.0486	11.97	.1573	11.97	12.49	.1573	-5.85	12.63
36	-.00	14.23	-.5104	-.08	19.43	-.6431	.2891	-.2804	-.0971	12.05	.1265	12.05	11.88	.1265	-4.79	11.43
48	.06	15.56	-.5591	-.10	21.01	-.6982	.2496	-.2599	-.1059	12.30	.1220	12.30	11.47	.1220	-4.26	10.73
60	.09	16.32	-.5875	-.06	21.29	-.7051	.2171	-.2307	-.1102	12.45	.1245	12.45	11.20	.1245	-3.88	10.61
72	.04	16.84	-.6104	-.06	21.13	-.7003	.1902	-.2177	-.1027	12.37	.1264	12.37	10.96	.1264	-3.96	10.67

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	24.75	11.79	.1699	-2.74	12.93	620				25.02	-2.54					
12	.01	8.81	-.2707	.00	8.66	-.3295	.1590	-.1808	.0430	12.05	.1657	12.05	11.30	.1657	-7.83	12.09
24	-.03	9.57	-.3971	-.03	13.51	-.5180	.2421	-.2574	-.0129	11.63	.1399	11.63	10.77	.1399	-6.32	10.92
36	-.04	11.59	-.4933	-.02	16.35	-.6349	.2301	-.2524	-.0589	11.73	.1185	11.73	10.23	.1185	-4.67	9.89
48	-.00	12.73	-.5461	-.03	17.85	-.6958	.2066	-.2300	-.0845	11.91	.1084	11.91	9.87	.1084	-3.80	9.21
60	.00	13.40	-.5766	-.03	18.24	-.7096	.1765	-.2052	-.0849	11.99	.1065	11.99	9.63	.1065	-3.60	9.04
72	-.01	13.87	-.5991	-.05	18.17	-.7044	.1466	-.1883	-.0876	12.00	.1015	12.00	9.44	.1015	-3.55	9.11

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (19214) - VANDENBERG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	23.32	10.34	.2158	-1.90	10.95	620										
12	-.02	6.31	-.2934	.02	7.35	-.3332	-.3332	.1429	-.1480	.0350		11.02	9.83	.2202	-5.36	10.26
24	-.14	8.41	-.4173	.01	11.11	-.5073	-.5073	.2300	-.2233	-.0239		10.40	9.35	.2032	-4.64	9.35
36	-.16	9.93	-.5004	.01	13.46	-.6133	-.6133	.2335	-.2377	-.0660		10.54	8.93	.1888	-3.70	8.53
48	-.14	10.89	-.5498	.00	14.72	-.6789	-.6789	.2477	-.2494	-.1034		10.59	8.63	.1647	-3.20	7.99
60	-.14	11.67	-.5888	.00	15.09	-.6955	-.6955	.2420	-.2514	-.1153		10.65	8.35	.1465	-3.16	7.81
72	-.20	12.13	-.6116	-.00	15.10	-.6946	-.6946	.2281	-.2395	-.1302		10.75	8.18	.1337	-2.97	7.82

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	20.81	6.63	.1693	-1.51	6.92	620										
12	-.01	5.44	-.3080	-.04	6.00	-.3256	-.3256	.0833	-.0877	.0102		10.19	8.20	.1712	-3.07	8.41
24	-.05	6.91	-.4034	-.05	8.86	-.4999	-.4999	.1939	-.1598	-.0501		9.80	7.89	.1488	-2.77	7.75
36	-.08	8.11	-.4752	-.05	10.78	-.5931	-.5931	.2112	-.1892	-.0819		9.93	7.59	.1283	-2.45	7.12
48	-.08	9.06	-.5268	-.03	11.76	-.6567	-.6567	.2224	-.2117	-.1083		9.75	7.28	.0990	-2.35	6.70
60	-.06	9.71	-.5745	-.00	12.27	-.6848	-.6848	.2321	-.2014	-.1176		9.35	7.05	.0885	-2.16	6.47
72	-.10	10.05	-.5977	.02	12.22	-.6842	-.6842	.1990	-.2018	-.1330		9.84	6.92	.0875	-2.16	6.48

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.01	5.14	-.3173	-.02	5.33	-.3425	-.3425	.0492	-.0203	8.97	7.42	.1387	-.72	7.06
24	-.01	6.16	-.3848	-.03	7.50	-.4868	-.4868	.1539	-.0806	8.89	7.23	.1197	-.72	6.57
36	.03	7.19	-.4468	-.02	9.05	-.5920	-.5920	.1908	-.1398	8.90	7.00	.0970	-1.16	6.05
48	.03	7.98	-.5041	-.01	9.98	-.6566	-.6566	.2135	-.1751	8.79	6.76	.0591	-1.25	5.66
60	.04	8.46	-.5384	.00	10.46	-.6896	-.6896	.1958	-.1768	8.76	6.60	.0399	-1.32	5.43
72	-.02	8.83	-.5657	.02	10.60	-.6972	-.6972	.1723	-.1881	8.61	6.46	.0360	-1.72	5.36

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
18.85	-1.18

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.01	4.99	-.3403	-.02	4.81	-.3586	-.3586	.0194	-.0246	7.33	6.85	.0903	-.01	6.14
24	-.06	5.99	-.4142	.01	6.59	-.4953	-.4953	.1147	-.0240	7.21	6.64	.0763	-.07	5.71
36	-.06	6.57	-.4594	.01	7.87	-.5955	-.5955	.1753	-.1108	7.03	6.48	.0423	-.77	5.28
48	-.02	7.11	-.4963	.04	8.57	-.6506	-.6506	.1966	-.1692	7.00	6.33	.0084	-1.30	4.99
60	.01	7.49	-.5213	.04	9.02	-.6825	-.6825	.1669	-.1694	7.08	6.23	-.0082	-1.46	4.79
72	-.03	7.77	-.5454	.05	9.14	-.6884	-.6884	.1497	-.1763	6.98	6.12	-.0202	-1.68	4.75

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
16.15	-1.40

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (193214) - VANDENBERG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN X GIVEN Y	S.D. X GIVEN Y	MEAN Y GIVEN X	S.D. Y GIVEN X	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	11.78	6.40	.0414	-1.20	5.01	620	-.03	4.51	3.72	-.3726	.0135	-.0434	5.31	5.95	12.70	5.31	.0494	5.31	5.95	12.70	5.31
24							-.04	5.25	4.69	-.4701	.1280	-.0021	5.49	5.80		5.49	.0222	5.49	5.80		4.41
36							-.08	5.67	5.70	-.5726	.1451	-.0419	5.23	5.88		5.23	.0072	5.23	5.88		4.10
48							-.03	5.98	6.24	-.6282	.1589	-.0674	5.27	5.99		5.27	-.0175	5.27	5.99		3.90
60							-.04	6.35	6.55	-.6509	.1586	-.0937	5.22	5.46		5.22	-.0448	5.22	5.46		3.76
72							-.07	6.55	6.74	-.6774	.1037	-.0917	5.15	5.39		5.15	-.0425	5.15	5.39		3.69

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (YP, X)	MEAN X GIVEN Y	S.D. X GIVEN Y	MEAN Y GIVEN X	S.D. Y GIVEN X	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	8.65	6.09	.0253	-1.26	4.18	620	-.02	4.03	3.27	-.3877	.0423	-.0204	3.97	5.73	9.46	3.97	.0182	3.97	5.73	9.46	3.97
24							-.02	4.35	3.88	-.4604	.0741	.0517	4.17	5.55		4.17	.0082	4.17	5.55		3.70
36							-.05	4.87	4.50	-.5349	.0823	.0040	3.89	5.54		3.89	-.0009	3.89	5.54		3.53
48							-.03	5.11	4.92	-.5899	.0858	-.0126	3.83	5.45		3.83	-.0183	3.83	5.45		3.37
60							-.05	5.41	5.21	-.6190	.0974	-.0402	3.71	5.36		3.71	-.0356	3.71	5.36		3.28
72							-.07	5.64	5.47	-.6470	.1118	-.0916	3.60	5.27		3.60	-.0524	3.60	5.27		3.19

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.00	4.29	-.3471	.00	3.30	-.4361	-.4361	.1094	620	2.91	5.84	.0028	-.15	3.43
24	.01	4.67	-.3822	.03	3.57	-.4935	-.4935	.1095		2.93	5.75	-.0057	-.01	3.33
36	-.04	4.97	-.4182	.05	4.03	-.5499	-.5499	.0809		2.79	5.65	-.0210	-.15	3.18
48	-.03	5.19	-.4407	.04	4.25	-.5796	-.5796	.0662		2.76	5.58	-.0346	-.21	3.11
60	-.02	5.32	-.4853	.06	4.49	-.6149	-.6149	.0513		2.42	5.44	-.0426	-.20	3.01
72	-.12	5.47	-.5066	.07	4.56	-.6229	-.6229	.0415		2.31	5.37	-.0495	-.32	2.99

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.07	4.48	-.3416	-.02	3.29	-.4704	-.4704	.0840	620	1.85	5.31	-.0497	-.37	3.05
24	.08	4.91	-.3772	.01	3.41	-.4836	-.4836	.0851		1.97	6.21	-.0703	-.22	3.02
36	.03	5.37	-.4159	.00	3.89	-.5544	-.5544	.0573		1.86	6.10	-.0757	-.41	2.89
48	.10	5.60	-.4373	.01	4.19	-.5941	-.5941	.0677		1.84	6.04	-.0767	-.39	2.79
60	.02	5.43	-.4684	.03	4.30	-.6126	-.6126	.0480		1.49	5.93	-.0823	-.33	2.74
72	.03	5.54	-.4870	.03	4.37	-.6220	-.6220	.0371		1.39	5.87	-.0775	-.44	2.72

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - MARCH
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.05	3.51	-.2839	-.01	2.84	-.4629	-1.07	3.08	620	.89	6.78	.0071	-.40	2.73
24	.06	4.17	-.3136	-.02	3.17	-.5101				1.01	6.71	.0024	-.17	2.63
36	.08	4.62	-.3463	-.00	3.67	-.5867				.93	6.63	.0014	-.27	2.48
48	.08	5.05	-.3788	.01	3.84	-.6117				.97	6.54	-.0096	-.33	2.43
60	.06	5.23	-.3973	.02	4.04	-.6389				.87	6.49	-.0080	-.44	2.37
72	.12	5.59	-.4281	.01	4.09	-.6459				.86	6.39	-.0235	-.49	2.35

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.07	4.07	-.2717	.03	3.02	-.4707	-1.07	3.24	620	.56	7.53	.1362	-.49	2.86
24	.08	4.33	-.3034	.03	3.38	-.5302				.61	7.46	.1336	-.22	2.74
36	.08	4.67	-.3320	.05	3.75	-.5863				.52	7.39	.1448	-.39	2.63
48	.11	5.05	-.3581	.07	4.11	-.6423				.54	7.32	.1305	-.39	2.48
60	.11	5.39	-.3854	.08	4.35	-.6805				.49	7.23	.1442	-.47	2.37
72	.17	5.54	-.4029	.08	4.38	-.6831				.45	7.17	.1278	-.57	2.35

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.07	3.80	-.2277	.01	3.16	-.4829	-.54	3.29	620	.73	8.51	.2264	-.49	2.88
24	.05	4.26	-.2593	.04	3.59	-.5547				.74	8.44	.2318	-.13	2.74
36	.07	4.64	-.2814	.06	3.93	-.6039				.71	8.38	.2305	-.37	2.62
48	.12	5.17	-.3199	.07	4.35	-.6680				.68	8.28	.2421	-.39	2.44
60	.14	5.61	-.3556	.08	4.52	-.6917				.59	8.16	.2393	-.47	2.38
72	.15	5.81	-.3771	.08	4.76	-.7282				.50	8.08	.2536	-.57	2.22

282

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.03	4.08	-.2181	-.00	3.25	-.4976	-.30	3.29	620	.79	9.43	.2772	-.44	2.84
24	.07	4.50	-.2495	-.02	3.61	-.5550				.69	9.36	.2790	-.42	2.73
36	.13	5.11	-.2829	-.02	4.01	-.6129				.72	9.27	.2876	-.48	2.58
48	.18	5.47	-.3144	-.03	4.32	-.6655				.63	9.17	.2843	-.55	2.43
60	.21	6.04	-.3509	-.03	4.59	-.7042				.59	9.04	.3019	-.59	2.29
72	.24	6.37	-.3763	-.02	4.74	-.7259				.53	8.93	.2944	-.71	2.18

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (9324) - VANDENBERG
 MONTH OF RECORD - MARCH
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (X,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	4.43	0.36	.3258	-1.18	3.27	0	.01	3.00	-.4587	-.0619	-.0371	-.0371	-.0371	-.0619	.0370	.97	10.10	.3801	-.45	2.89
24							-.00	3.50	-.5371	-.0127	-.0542	-.0542	-.0542	-.0127	.0169	.84	10.02	.3925	-.40	2.75
36							-.02	3.91	-.5997	.0319	-.1424	-.1424	-.1424	.0319	.0156	.84	9.89	.3992	-.55	2.59
48							-.02	4.21	-.6468	.0745	-.1870	-.1870	-.1870	.0745	.0156	.79	9.76	.4095	-.62	2.45
60							-.03	4.37	-.6718	.1119	-.2423	-.2423	-.2423	.1119	.0195	.71	9.64	.4132	-.68	2.36
72							-.03	4.61	-.7066	.1062	-.2564	-.2564	-.2564	.1062	.0192	.74	9.49	.4251	-.68	2.23

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 6.59
 GIVEN Y
 -1.11

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (X,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	5.63	11.39	.4227	.04	3.57	620	.01	2.85	-.4114	-.0147	-.0982	-.0982	-.0982	-.0147	.0397	1.46	11.15	.4717	-.72	3.23
24							.01	3.49	-.4993	-.0283	-.1444	-.1444	-.1444	-.0283	.0219	1.21	11.00	.4869	-.66	3.06
36							-.01	4.07	-.5801	.0309	-.2105	-.2105	-.2105	.0309	.0245	1.10	10.85	.5109	-.79	2.85
48							-.03	4.45	-.6343	.1249	-.2661	-.2661	-.2661	.1249	.0246	.98	10.68	.5306	-.85	2.67
60							-.03	4.69	-.6679	.1597	-.3011	-.3011	-.3011	.1597	.0185	.90	10.48	.5421	-.91	2.56
72							-.05	4.78	-.6845	.1712	-.2955	-.2955	-.2955	.1712	-.0037	.99	10.32	.5370	-.69	2.52

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 8.00
 GIVEN Y
 .17

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (92214) - VANDENBERG

X = U/IAT T)
Y = V/IAT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
3	1/65 - 12/74	0	90.0	1.83	2.78	-.5703	-1.84	3.48	520
3	1/65 - 12/74	1	90.0	1.13	4.00	-.0862	-3.35	6.35	620
3	1/65 - 12/74	2	90.0	3.21	5.00	-.0330	-3.30	7.48	620
3	1/65 - 12/74	3	90.0	6.08	6.08	-.0176	-3.51	8.53	620
3	1/65 - 12/74	4	90.0	8.62	8.39	.0439	-3.52	9.74	620
3	1/65 - 12/74	5	90.0	11.05	10.20	.0475	-3.60	11.04	620
3	1/65 - 12/74	6	90.0	13.19	11.69	.0894	-3.81	12.21	620
3	1/65 - 12/74	7	90.0	15.20	13.06	.1363	-4.11	13.73	620
3	1/65 - 12/74	8	90.0	17.17	14.48	.1792	-4.39	15.17	620
3	1/65 - 12/74	9	90.0	19.07	15.33	.2137	-4.65	16.56	620
3	1/65 - 12/74	10	90.0	21.43	15.64	.2276	-4.66	17.35	620
3	1/65 - 12/74	11	90.0	23.72	15.07	.2201	-4.44	16.60	620
3	1/65 - 12/74	12	90.0	25.02	13.84	.1946	-3.56	15.06	620
3	1/65 - 12/74	13	90.0	24.75	11.79	.1699	-2.74	12.93	620
3	1/65 - 12/74	14	90.0	23.32	10.34	.2158	-1.90	10.95	620
3	1/65 - 12/74	15	90.0	20.81	8.33	.1693	-1.51	8.92	620
3	1/65 - 12/74	16	90.0	18.03	7.83	.1355	-1.18	7.52	620
3	1/65 - 12/74	17	90.0	15.26	7.30	.0862	-1.36	6.58	620
3	1/65 - 12/74	18	90.0	11.78	6.40	.0414	-1.20	5.01	620
3	1/65 - 12/74	19	90.0	8.65	6.09	.0253	-1.26	4.18	620
3	1/65 - 12/74	20	90.0	6.44	6.24	-.0051	-1.38	3.83	620
3	1/65 - 12/74	21	90.0	4.60	6.72	-.0538	-1.27	3.48	620
3	1/65 - 12/74	22	90.0	3.12	7.07	-.0003	-1.07	3.08	620
3	1/65 - 12/74	23	90.0	2.90	7.84	.1132	-.86	3.24	620
3	1/65 - 12/74	24	90.0	3.30	8.74	.1927	-.54	3.29	620
3	1/65 - 12/74	25	90.0	3.68	9.66	.2329	-.30	3.29	620
3	1/65 - 12/74	26	90.0	4.43	10.36	.3258	-.18	3.27	620
3	1/65 - 12/74	27	90.0	5.63	11.39	.4227	.04	3.57	620

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (193214) - VANDENBERG
MONTH OF RECORD - APRIL
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	2.22	2.80	-.6305	-2.39	3.24									
12	-.01	4.50	-.8054	.00	3.79	-.5952	-.6526	.4102	.5007	1.18	1.66	-.6614	-1.25	2.60
24	-.00	2.41	-.4375	-.01	3.36	-.5344	-.4788	.2746	.2043	1.14	2.51	-.6753	-1.20	2.73
36	-.02	4.67	-.8332	-.03	4.48	-.7059	-.6541	.4639	.5452	1.14	1.52	-.6331	-1.27	2.29
48	-.02	2.73	-.4951	-.02	4.03	-.6393	-.5506	.3813	.2529	1.14	2.43	-.6802	-1.19	2.49
60	-.03	4.74	-.8326	-.00	4.63	-.7334	-.6749	.4950	.5698	1.14	1.46	-.5984	-1.25	2.20
72	-.01	2.83	-.5159	.00	4.04	-.6440	-.5930	.3957	.2925	1.13	2.40	-.6638	-1.21	2.48

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	1.31	3.99	-.0877	-4.01	5.68									
12	-.02	4.20	-.5277	-.02	4.84	-.4266	.0569	.1338	-.2293	1.27	3.30	-.1412	-1.79	5.06
24	-.04	4.68	-.5944	-.05	5.14	-.5499	-.1005	.2380	-.1236	1.04	3.13	-.0684	-1.86	4.63
36	-.08	5.43	-.6839	-.02	7.10	-.6629	.0016	.1256	-.1183	.82	2.83	-.1492	-1.90	4.19
48	-.12	5.30	-.6839	.04	7.64	-.6872	-.1009	.1329	.0157	.55	2.91	-.0628	-1.97	4.11
60	-.10	5.61	-.7233	-.09	7.98	-.7170	-.0274	.0469	.0028	.60	2.76	-.1371	-1.99	3.95
72	-.06	5.39	-.7023	.17	7.77	-.7030	-.1330	.1200	.0697	.63	2.84	-.0396	-1.95	4.03

DATE	TIME	LOCATION	WIND	SEA	TEMP	WIND	SEA	TEMP
2004-06-01	08:00	01	10	1	25	10	1	25
2004-06-01	09:00	01	10	1	25	10	1	25
2004-06-01	10:00	01	10	1	25	10	1	25
2004-06-01	11:00	01	10	1	25	10	1	25
2004-06-01	12:00	01	10	1	25	10	1	25
2004-06-01	13:00	01	10	1	25	10	1	25
2004-06-01	14:00	01	10	1	25	10	1	25
2004-06-01	15:00	01	10	1	25	10	1	25
2004-06-01	16:00	01	10	1	25	10	1	25
2004-06-01	17:00	01	10	1	25	10	1	25
2004-06-01	18:00	01	10	1	25	10	1	25
2004-06-01	19:00	01	10	1	25	10	1	25
2004-06-01	20:00	01	10	1	25	10	1	25
2004-06-01	21:00	01	10	1	25	10	1	25
2004-06-01	22:00	01	10	1	25	10	1	25
2004-06-01	23:00	01	10	1	25	10	1	25
2004-06-02	00:00	01	10	1	25	10	1	25
2004-06-02	01:00	01	10	1	25	10	1	25
2004-06-02	02:00	01	10	1	25	10	1	25
2004-06-02	03:00	01	10	1	25	10	1	25
2004-06-02	04:00	01	10	1	25	10	1	25
2004-06-02	05:00	01	10	1	25	10	1	25
2004-06-02	06:00	01	10	1	25	10	1	25
2004-06-02	07:00	01	10	1	25	10	1	25

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تاریخ	موضوع	ملاحظات
۱۳۹۷/۰۱/۰۱	جلسه اول	موضوع: بررسی وضعیت موجود
۱۳۹۷/۰۱/۰۲	جلسه دوم	موضوع: تعیین اهداف و برنامه‌ریزی
۱۳۹۷/۰۱/۰۳	جلسه سوم	موضوع: بررسی گزارشات و پیگیری
۱۳۹۷/۰۱/۰۴	جلسه چهارم	موضوع: تصمیم‌گیری و اقدامات
۱۳۹۷/۰۱/۰۵	جلسه پنجم	موضوع: ارزیابی و نتیجه‌گیری

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時間	場所	内容	備考
10:00	講義室	講義	
10:30	講義室	講義	
11:00	講義室	講義	
11:30	講義室	講義	
12:00	講義室	講義	
12:30	講義室	講義	
13:00	講義室	講義	
13:30	講義室	講義	
14:00	講義室	講義	
14:30	講義室	講義	
15:00	講義室	講義	
15:30	講義室	講義	
16:00	講義室	講義	
16:30	講義室	講義	
17:00	講義室	講義	
17:30	講義室	講義	
18:00	講義室	講義	
18:30	講義室	講義	
19:00	講義室	講義	
19:30	講義室	講義	
20:00	講義室	講義	
20:30	講義室	講義	
21:00	講義室	講義	
21:30	講義室	講義	
22:00	講義室	講義	
22:30	講義室	講義	
23:00	講義室	講義	
23:30	講義室	講義	
24:00	講義室	講義	

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ALTITUDE (KM) - 6

ALTITUDE (KM) - 7

X	X	(X, Y)	Y	Y	X	Y
16 25	13 19	1773	-3 94	15 00	15 42	-2 74

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (322-1) - VAN DERBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 50.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (Y, Y)	MEAN Y	S.D. Y	P (XP, Y)	MEAN XP	S.D. XP	P (Y, XP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	21.27	15.08	.2873	-4.08	17.42	.600										
24																
36																
48																
60																
72																

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
12	21.24	-2.64
24		
36		
48		
60		
72		

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	P (Y, Y)	MEAN Y	S.D. Y	P (XP, Y)	MEAN XP	S.D. XP	P (Y, XP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	23.20	15.23	.2802	-3.53	16.82	.600										
24																
36																
48																
60																
72																

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
12	23.25	-2.13
24		
36		
48		
60		
72		

BIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 S.A. ON 3221 - VANDENBERG
 MON. OF RECORD - APRIL
 PERIOD OF RECORD - 1/55 - 12/74
 ALTITUDE ANGLE - 35.5

ALTITUDE (XP) - 12

BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN Y	S.D. Y	P (1, Y)	MEAN X	S.D. X	P (X, Y)	MEAN XP	S.D. XP	P (XP, Y)	MEAN YP	S.D. YP	GIVEN Y	GIVEN XP
22.8	13.84	.2500		-2.35	15.48					22.87	-1.15		
12	MEAN XP	S.D. XP	P (1, XP)	MEAN YP	S.D. YP	P (XP, Y)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP		
24	-22	5.84	-.7382	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82
35	-52	12.15	-.4058	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82
45	-82	17.20	-.2454	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82
55	-112	21.23	-.1573	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82
72	-142	25.26	-.0955	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82

ALTITUDE (YP) - 12

BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN Y	S.D. Y	P (1, Y)	MEAN X	S.D. X	P (X, Y)	MEAN XP	S.D. XP	P (XP, Y)	MEAN YP	S.D. YP	GIVEN Y	GIVEN XP
22.8	13.84	.2500		-1.92	12.84					22.82	1.23		
12	MEAN XP	S.D. XP	P (1, XP)	MEAN YP	S.D. YP	P (XP, Y)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP		
24	-22	5.84	-.7382	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82
35	-52	12.15	-.4058	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82
45	-82	17.20	-.2454	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82
55	-112	21.23	-.1573	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82
72	-142	25.26	-.0955	1.13	1.12	-.3451	1.13	1.12	-.3451	1.13	1.12	12.82	12.82

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
 STATION (19214) - VALDEBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/25 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N
12	21.55	9.14	.2090	.03	6.39	-.3248	.25	10.85	600	.03	6.39	-.3248	.25	10.85	600	.03	6.39	-.3248	.25	10.85	600
24				.10	9.75	-.4513				.10	9.75	-.4513				.10	9.75	-.4513			
36				.16	11.81	-.5572				.16	11.81	-.5572				.16	11.81	-.5572			
48				.26	13.05	-.6182				.26	13.05	-.6182				.26	13.05	-.6182			
60				.43	13.78	-.6541				.43	13.78	-.6541				.43	13.78	-.6541			
72				.58	14.20	-.6825				.58	14.20	-.6825				.58	14.20	-.6825			

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)
12	21.46	8.54	.2225	1.34	10.33	-.0849
24		8.12	.2255		10.03	-.1080
36		7.72	.2279		10.17	-.1438
48		7.33	.2317		10.14	-.1602
60		7.01	.2396		10.07	-.1528
72		6.80	.2550		9.92	-.1403

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN Y	S.D. Y	N
12	19.33	8.00	.2190	.07	5.31	-.3244	.73	9.21	600	.07	5.31	-.3244	.73	9.21	600	.07	5.31	-.3244	.73	9.21	600
24				.13	7.90	-.4473				.13	7.90	-.4473				.13	7.90	-.4473			
36				.23	9.77	-.5527				.23	9.77	-.5527				.23	9.77	-.5527			
48				.29	10.77	-.6094				.29	10.77	-.6094				.29	10.77	-.6094			
60				.39	11.33	-.6454				.39	11.33	-.6454				.39	11.33	-.6454			
72				.54	11.75	-.6743				.54	11.75	-.6743				.54	11.75	-.6743			

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	R (YP,X)
12	19.14	7.40	.2392	1.78	10.77	-.0743
24		7.12	.2340		10.23	-.1152
36		6.78	.2310		10.05	-.1547
48		6.51	.2214		9.85	-.1741
60		6.19	.2271		9.66	-.1666
72		6.02	.2157		9.50	-.1764

QUADRVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION 3221-1 - JANUARY 1963
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/15 - 12/74
 ALPHA ANGLE - 30.3

ALPHA ANGLE (°) - 15

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (1,1)	MEAN Y	S.D. Y	P (1,1)	N	MEAN XP	S.D. XP	P (1,1)	MEAN YP	S.D. YP	P (1,1)	MEAN XP	S.D. XP	P (1,1)	MEAN YP	S.D. YP	P (1,1)
12	10.26	5.26	.1334	.8	7.78	.1334	500	10.26	5.26	.1334	1.82	1.82	.1334	10.26	5.26	.1334	1.82	1.82	.1334

293

ALPHA ANGLE (°) - 17

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	P (1,1)	MEAN Y	S.D. Y	P (1,1)	N	MEAN XP	S.D. XP	P (1,1)	MEAN YP	S.D. YP	P (1,1)	MEAN XP	S.D. XP	P (1,1)	MEAN YP	S.D. YP	P (1,1)
12	12.21	5.29	.1587	.82	5.50	.1587	500	12.21	5.29	.1587	1.57	1.57	.1587	12.21	5.29	.1587	1.57	1.57	.1587

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	10.04	5.43	.0843	.83	5.16	500					
24											
36											
48											
60											
72											

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	N	GIVEN X	GIVEN Y
12							3.88	1.60
24								
36								
48								
60								
72								

ALTITUDE (M) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	7.01	4.74	.0352	.78	4.13	500					
24											
36											
48											
60											
72											

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	N	GIVEN X	GIVEN Y
12							6.87	1.38
24								
36								
48								
60								
72								

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-05	3.78	-0.4291	.08	2.74	-0.4171	-0.4171	-0.0394	.0267	.0216	4.01	.0555	-.01	3.12
24	-08	3.82	-0.4351	.09	3.10	-0.4780	-0.4780	-0.0114	.1010	-.0653	3.98	.0650	.33	3.00
36	-09	4.21	-0.4820	.10	3.50	-0.5353	-0.5353	.0414	.0267	-.0475	3.28	.0599	.19	2.89
48	-14	4.57	-0.5239	.12	3.86	-0.5936	-0.5936	.0856	.0282	-.0847	3.77	.0471	.25	2.75
60	-16	4.92	-0.5638	.14	4.23	-0.6199	-0.6199	.1200	-.0205	-.0823	3.66	.0317	.16	2.69
72	-17	5.15	-0.5842	.19	4.23	-0.6624	-0.6624	.1498	-.0702	-.0842	3.60	.0041	.10	2.57

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-05	3.85	-0.4381	.05	2.95	-0.4810	-0.4810	-0.0279	.0104	.0238	4.03	.1839	-.01	2.75
24	-11	3.75	-0.4338	.06	3.12	-0.5124	-0.5124	.0115	.0680	-.0517	4.03	.1826	.20	2.68
36	-15	4.33	-0.5014	.05	3.52	-0.5317	-0.5317	.0339	.0078	-.0157	3.87	.1986	.06	2.45
48	-20	4.41	-0.5112	.05	3.73	-0.6215	-0.6215	.0833	-.0108	-.0533	3.85	.1771	.09	2.35
60	-24	4.78	-0.5463	.05	4.23	-0.6622	-0.6622	.1174	-.0573	-.0555	3.75	.1744	.04	2.35
72	-28	4.99	-0.5707	.06	4.28	-0.6849	-0.6849	.1657	-.1048	-.0730	3.68	.1443	.02	2.29

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (12214) - JANGNEUNG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA VALUE - 50.0

ALTITUDE (M) - 22

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	1.89	4.59	.1992	.04	2.82	800									
24															
36															
48															
60															
72															

ALTITUDE (M) - 23

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	1.22	4.92	.2015	.03	2.94	800									
24															
36															
48															
60															
72															

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	1.68	5.09	.2060	.01	2.58	600	.71	4.75	.2745	.09	2.23	1.26	.09	.71	4.75	.2745	.09	2.23
24	24																		
36	24																		
48	24																		
60	24																		
72	24																		

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	24	2.50	5.86	.1862	-.10	2.91	600	.123	5.29	.2478	-.10	2.82	2.49	-.03	.123	5.29	.2478	-.10	2.82
24	24																		
36	24																		
48	24																		
60	24																		
72	24																		

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (83214) - VANDENBERG
 MONTH OF RECORD - APRIL
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
		3.14	5.05	.2909	-.13	3.02	500										
12		-.07	3.46	-.2832	-.04	2.87		-.04	2.87	.0385	-.4734	-.0660	1.53	5.79	.3360	-.21	2.65
24		-.17	3.85	-.3241	-.03	3.14		-.03	3.14	.0687	-.5235	-.0220	1.51	5.73	.3500	-.04	2.57
36		-.26	4.31	-.3655	-.02	3.57		-.02	3.57	.1258	-.5928	-.0944	1.43	5.63	.3628	-.12	2.43
48		-.35	4.48	-.3859	-.04	3.83		-.04	3.83	.1658	-.6330	-.1237	1.35	5.58	.3618	-.12	2.33
60		-.44	4.92	-.4336	-.07	4.20		-.07	4.20	.1823	-.6826	-.1790	1.24	5.45	.3620	-.24	2.17
72		-.56	5.18	-.4678	-.11	4.21		-.11	4.21	.2242	-.6935	-.1945	1.13	5.34	.3644	-.20	2.17

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN
 X 3.03
 Y -.15

ALTITUDE (KM) - 27

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
		4.38	5.58	.2794	.00	3.32	500										
12		-.07	3.90	-.3032	-.05	3.12		-.05	3.12	-.1098	-.4539	.0210	2.16	6.27	.3471	-.09	2.95
24		-.19	4.33	-.3491	-.08	3.45		-.08	3.45	-.0196	-.5084	.0436	2.02	6.17	.3535	.13	2.86
36		-.28	4.80	-.3812	-.07	3.97		-.07	3.97	.0035	-.5817	-.0080	1.98	6.08	.3761	-.00	2.70
48		-.39	5.00	-.4053	-.10	4.17		-.10	4.17	.0770	-.6034	-.0368	1.87	6.02	.3694	.03	2.65
60		-.47	5.34	-.4410	-.13	4.39		-.13	4.39	.1067	-.6345	-.0821	1.77	5.90	.3656	-.09	2.57
72		-.56	5.70	-.4836	-.14	4.55		-.14	4.55	.1225	-.6601	-.1040	1.63	5.76	.3775	-.09	2.49

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN
 X 4.31
 Y -.10

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT FT.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
*	1/55 - 12/74	0	90.0	2.22	2.80	-.6395	-2.39	3.24	500
*	1/55 - 12/74	1	90.0	1.31	3.29	-.0277	-4.01	5.58	500
*	1/55 - 12/74	2	90.0	2.83	4.97	-.1232	-3.52	7.02	500
*	1/55 - 12/74	3	90.0	5.61	6.36	-.0355	-3.94	8.50	500
*	1/55 - 12/74	4	90.0	6.55	8.47	.0371	-4.12	10.35	500
*	1/55 - 12/74	5	90.0	11.34	10.30	.1053	-4.03	11.90	500
*	1/55 - 12/74	6	90.0	13.91	11.96	.1423	-4.02	13.45	500
*	1/55 - 12/74	7	90.0	15.25	13.19	.1773	-3.94	15.00	500
*	1/55 - 12/74	8	90.0	16.19	14.43	.2123	-4.05	16.23	500
*	1/55 - 12/74	9	90.0	20.00	15.47	.2733	-4.03	17.02	500
*	1/55 - 12/74	10	90.0	21.87	16.68	.2873	-4.02	17.42	500
*	1/55 - 12/74	11	90.0	23.20	15.23	.2522	-3.53	15.82	500
*	1/55 - 12/74	12	90.0	23.94	13.84	.2544	-2.89	15.49	500
*	1/55 - 12/74	13	90.0	23.32	11.20	.2311	-1.02	12.84	500
*	1/55 - 12/74	14	90.0	21.55	9.14	.2390	.25	10.85	500
*	1/55 - 12/74	15	90.0	19.33	8.00	.2130	.73	9.21	500
*	1/55 - 12/74	16	90.0	16.36	6.93	.1934	.61	7.79	500
*	1/55 - 12/74	17	90.0	13.21	6.03	.1087	.82	6.50	500
*	1/55 - 12/74	18	90.0	11.04	5.43	.0343	.33	5.16	500
*	1/55 - 12/74	19	90.0	7.01	4.74	.0352	.35	4.13	500
*	1/55 - 12/74	20	90.0	4.34	4.44	.0113	.37	3.43	500
*	1/55 - 12/74	21	90.0	2.95	4.48	.1350	.29	3.14	500
*	1/55 - 12/74	22	90.0	1.69	4.58	.1862	.74	2.82	500
*	1/55 - 12/74	23	90.0	1.25	4.82	.2015	.09	2.54	500
*	1/55 - 12/74	24	90.0	1.58	5.09	.2060	.01	2.58	500
*	1/55 - 12/74	25	90.0	2.50	5.66	.1852	.01	2.61	500
*	1/55 - 12/74	26	90.0	3.14	6.05	.2909	-.13	3.02	500
*	1/55 - 12/74	27	90.0	4.32	6.58	.2794	.03	3.32	500

ALTITUDE (M) - 0

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XF AND YP

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. Y _P	
		2.32	2.39	-.5009	-2.15	2.59	520	2.49	-2.20		
DT	HR	MEAN Y _P	S.D. Y _P	R (X,Y _P)	R (Y,Y _P)	R (X _P ,Y _P)	R (Y _P ,X)	S.D. Y _P	P (X _P ,Y _P)	MEAN Y _P	S.D. Y _P
	12	.02	3.86	-.8074	-.5045	-.6401	.3920	1.41	-.5105	-1.04	2.05
	24	.04	2.06	-.4357	-.5037	-.3937	.1959	1.75	-.5505	-1.05	2.24
	36	.05	4.03	-.8433	-.6341	-.6436	.4713	1.28	-.5424	-1.01	1.86
	48	.05	2.25	-.4823	-.6272	-.5040	.3187	2.03	-.6420	-1.01	2.02
	60	.07	4.02	-.8535	-.7563	-.6537	.5032	1.64	-.4936	-1.00	1.69
	72	.06	2.35	-.5036	-.6628	-.5061	.3530	2.05	-.5502	-.96	1.94

6-77170E (20P) - 1

CONDIT:ORAL E:VARIATE NORMAL STATISTICS
FOR XP AND YP

da' ex' a' x 30 5311511715 7400N 317127A73cm2

DT	HR	MEAN X _P	S.D. X _P	P (X,X _P)	MEAN Y _P	S.D. Y _P	N	GIVEN X	GIVEN Y	R (X _P ,Y _P)	MEAN X _P	S.D. X _P	S.D. Y _P
12	12	.51	3.34	-.5573	-.4131	.1271	-	2.83	-3.140	-.73	1.95	4.00	
13	13	.53	3.50	-.5290	-.4823	-.1939	-	2.53	-.2122	-.84	1.37	3.94	
35	35	.51	4.63	-.5742	-.5765	-.0080	-	2.50	-.3505	-.93	3.59		
38	38	-.02	4.23	-.5151	-.5040	-.1764	-	2.53	-.2375	-.96	3.50		
50	50	-.03	5.01	-.7332	-.6822	-.0513	-	2.32	-.3533	-.93	3.29		
72	72	-.05	4.55	-.6574	-.6345	-.1336	-	2.54	-.2025	-.95	3.32		

QUADRVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION 1321-1 - VANDERBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 2

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
DT	1.02	4.10	-0.3577	-3.13	5.43	620							.95	-2.96		
12	.04	3.50	-0.325	0.11	4.11	.1436	-0.3782	5.15		1.01	3.53	-0.190		-1.53	4.39	
24	.05	4.13	-0.522	0.00	5.15	.2315	-0.745	5.15		1.01	3.45	-0.456		-1.52	4.69	
36	.02	4.94	-0.597	0.01	6.19	.2788	-0.5719	6.19		1.01	3.21	-0.491		-1.56	4.35	
48	.03	5.13	-0.6298	-0.04	6.68	.2729	-0.5218	6.68		1.01	3.12	-0.472		-1.57	4.17	
60	.04	5.66	-0.6843	-0.03	7.13	.2732	-0.5700	7.13		1.01	2.95	-0.4551		-1.60	3.99	
72	.04	5.67	-0.6843	-0.03	7.23	.2665	-0.5817	7.23		1.01	2.97	-0.4447		-1.62	3.95	

ALTITUDE (M) - 3

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X,Y)	MEAN YP	S.D. YP	P (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
DT	2.72	5.90	-0.3074	-2.57	6.53	620							2.74	-2.46		
12	.04	3.50	-0.325	0.11	4.11	.1436	-0.3782	5.15		1.01	3.53	-0.190		-1.53	4.39	
24	.05	4.13	-0.522	0.00	5.15	.2315	-0.745	5.15		1.01	3.45	-0.456		-1.52	4.69	
36	.02	4.94	-0.597	0.01	6.19	.2788	-0.5719	6.19		1.01	3.21	-0.491		-1.56	4.35	
48	.03	5.13	-0.6298	-0.04	6.68	.2729	-0.5218	6.68		1.01	3.12	-0.472		-1.57	4.17	
60	.04	5.66	-0.6843	-0.03	7.13	.2732	-0.5700	7.13		1.01	2.95	-0.4551		-1.60	3.99	
72	.04	5.67	-0.6843	-0.03	7.23	.2665	-0.5817	7.23		1.01	2.97	-0.4447		-1.62	3.95	

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

..... ALTITUDE (KM) - 4

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	24	4.54	7.29	-.3220	-2.20	7.45	520						4.70	-2.20					
12	24																		
24	36																		
36	48																		
48	60																		
60	72																		

..... ALTITUDE (KM) - 5

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	24	6.17	8.44	-.1763	-2.01	8.09	520						6.45	-2.01					
12	24																		
24	36																		
36	48																		
48	60																		
60	72																		

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - MAY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (X, Y)	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, YP)	MEAN Y	S.D. Y	R (X, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	7.48	9.54	-0.0695	-2.05	9.04	620	7.89	-2.09													
24																					
36																					
48																					
60																					
72																					

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	R (X, Y)	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (X, YP)	MEAN Y	S.D. Y	R (X, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	9.73	10.63	-0.0016	-2.29	10.32	620	9.23	-2.33													
24																					
36																					
48																					
60																					
72																					

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	10.06	11.72	.0601	-2.56	11.78							10.75	-2.70		
12	.02	7.22	-.2890	.10	8.66	-.3741	.2002	-.0094	-.1058	5.39	11.20	.0438	.11	10.89	
24	.03	10.04	-.4132	.16	12.48	-.5370	.2005	.0133	-.1735	5.38	10.61	.0193	.55	9.83	
36	.00	11.46	-.4756	.13	14.39	-.6229	.1716	.0357	-.1930	5.32	10.22	.0073	.57	9.05	
48	-.13	12.67	-.5291	.07	15.41	-.6700	.1385	.0271	-.1717	5.09	9.87	.0110	.13	8.63	
60	-.32	13.73	-.5782	-.02	16.26	-.7085	.1113	.0205	-.1546	4.87	9.50	.0123	-.20	8.23	
72	-.51	14.72	-.6061	-.16	16.68	-.7278	.1030	.0171	-.1500	4.76	9.26	.0108	-.38	8.00	

ALTITUDE (KM) - 9

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	11.27	12.61	.1322	-2.44	12.78							12.23	-2.53		
12	.00	7.90	-.2970	.10	9.81	-.3889	.2350	-.0564	-.0882	5.63	12.04	.1231	-.35	11.76	
24	-.02	10.86	-.4166	.18	13.80	-.5447	.2501	-.0400	-.1720	5.79	11.43	.1019	.47	10.64	
36	-.06	12.16	-.4695	.15	15.68	-.6248	.2293	-.0232	-.1973	5.77	11.07	.0926	.62	9.85	
48	-.18	13.29	-.5165	.08	16.76	-.6704	.1967	-.0214	-.1870	5.98	10.74	.0993	.31	9.37	
60	-.41	14.45	-.5652	-.01	17.64	-.7047	.1766	-.0308	-.1791	5.35	10.35	.0997	-.05	8.98	
72	-.61	15.15	-.5903	-.19	18.10	-.7223	.1650	-.0327	-.1754	5.24	10.13	.1006	-.26	8.77	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN		S.D. X	R		MEAN Y	S.D. Y	N		GIVEN		GIVEN		S.D.		MEAN		S.D.	
	XP	YP		(X, XP)	(X, Y)			XP	YP	X	Y	XP	YP	XP	YP	XP	YP	XP	YP
12	.01	8.38	-2943	.10	10.21	-.3802	.2506	-.0809	-.0755	6.23	12.83	.1930	-.72	12.56					
24	-.01	11.72	-.4203	.19	14.44	-.5355	.2855	-.0724	-.1758	6.48	12.16	.1755	.44	11.41					
36	-.05	13.12	-.4744	.17	16.58	-.6178	.2826	-.0540	-.2016	6.47	11.77	.1752	.69	10.57					
48	-.20	14.30	-.5210	.13	17.82	-.6651	.2385	-.0520	-.2043	6.29	11.41	.1795	.50	10.03					
60	-.43	15.44	-.5638	.03	18.84	-.7024	.2182	-.0589	-.1971	6.08	11.04	.1866	.17	9.58					
72	-.65	16.11	-.5844	-.16	19.43	-.7199	.2079	-.0762	-.1808	5.93	10.87	.1915	-.25	9.37					

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN		S.D. X	R		MEAN Y	S.D. Y	N		GIVEN		GIVEN		S.D.		MEAN		S.D.	
	XP	YP		(X, XP)	(X, Y)			XP	YP	X	Y	XP	YP	XP	YP	XP	YP	XP	YP
12	-.02	8.74	-.3043	.10	10.16	-.3660	.2757	-.0912	-.0775	5.59	13.37	.2621	-.67	13.07					
24	-.09	12.11	-.4244	.19	14.55	-.5231	.3257	-.0878	-.1921	7.06	12.68	.2589	.81	11.91					
36	-.16	13.64	-.4793	.17	16.80	-.6070	.2876	-.0631	-.2162	7.08	12.27	.2580	1.09	11.04					
48	-.32	14.95	-.5286	.15	18.20	-.6576	.2698	-.0728	-.2224	6.89	11.86	.2610	.78	10.47					
60	-.53	16.25	-.5746	.05	19.34	-.6955	.2612	-.0990	-.2234	5.70	11.44	.2648	.42	10.00					
72	-.76	16.79	-.5917	-.13	19.98	-.7123	.2505	-.1032	-.2061	6.50	11.28	.2752	.03	9.80					

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
							GIVEN X	GIVEN Y				
DT	15.02	13.20	.2846	-1.25	12.22	620	16.22	-1.33				
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-05	7.31	-.2955	.10	9.33	-.3590	.2351	6.91	12.60	.2969	-.95	11.96
24	-.14	11.33	-.4171	.17	12.95	-.5133	.3024	7.30	11.98	.2928	1.08	10.95
36	-.26	12.86	-.4271	.13	15.12	-.6071	.3037	7.40	11.47	.2838	1.47	10.12
48	-.41	14.18	-.5262	.12	15.60	-.6587	.3011	7.34	11.07	.2805	1.30	9.53
60	-.61	15.23	-.5738	.07	17.50	-.6920	.2822	7.17	10.75	.2838	.95	9.16
72	-.80	15.36	-.5998	-.03	18.13	-.7120	.2751	6.95	10.53	.2865	.43	8.95

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN Y	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP					
							GIVEN X	GIVEN Y				
DT	15.31	11.17	.2787	.00	10.61	620	16.31	-.03				
	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	R (XP, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.09	6.15	-.2741	.11	6.98	-.3410	.2590	7.30	10.74	.2904	1.39	9.96
24	-.12	8.83	-.4019	.17	10.35	-.5001	.3129	7.38	10.21	.2843	2.05	9.13
36	-.23	11.89	-.4900	.15	12.42	-.5983	.3158	7.44	9.70	.2729	2.10	8.41
48	-.42	13.25	-.5478	.14	13.78	-.6595	.3146	7.36	9.31	.2729	1.71	7.90
60	-.55	14.23	-.5879	.05	14.57	-.6966	.2907	7.23	9.01	.2783	1.27	7.56
72	-.63	13.99	-.6192	-.08	15.13	-.7190	.2912	7.07	8.76	.2867	.80	7.35

QUADRVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM)

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	
DT	14.75	8.92	.2104	.91	8.59	620							
HR													
12	-1.23	4.38	-.2787	.06	5.33			7.05	2.55	-.2254	2.73	2.10	
24	-1.20	7.21	-.2553	.11	8.04			7.04	8.17	-.2272	2.68	7.48	
36	-1.31	8.52	-.2842	.11	9.87			7.03	7.78	-.2207	2.50	6.91	
48	-1.42	9.84	-.3138	.12	11.22			5.98	7.43	-.2124	2.08	6.49	
60	-1.53	10.63	-.3452	.04	11.74			6.20	7.15	-.2036	1.75	6.17	
72	-1.64	11.33	-.3721	-.04	12.15			6.78	6.90	-.2039	1.41	6.00	

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN X	GIVEN Y
	15.61	.81

ALTITUDE (KM)

QUADRVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN Y	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	
DT	13.22	7.00	.1718	1.45	5.84	620							
HR													
12	-1.10	4.16	-.3036	.04	4.22			5.11	6.55	-.1875	2.52	6.47	
24	-1.21	5.33	-.3318	.07	6.05			6.05	6.43	-.1945	2.85	6.08	
36	-1.31	6.52	-.3578	.06	7.46			6.13	6.14	-.1957	2.38	5.95	
48	-1.38	7.51	-.3835	.04	8.44			6.11	5.28	-.2003	2.03	5.32	
60	-1.43	8.20	-.4056	.00	9.12			6.55	5.55	-.1974	1.72	5.05	
72	-1.55	8.52	-.4211	-.07	9.53			6.00	5.43	-.1922	1.46	4.85	

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	GIVEN Y	GIVEN Y
	13.91	1.30

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/85 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KMH) - 16

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
HR	11.17	5.80	.1725	1.81	5.89	620	11.67	11.67	1.48		
12	-14	3.63	-.3283	.02	3.78		4.98	5.48	.1998	1.95	5.33
24	-25	4.46	-.4311	.03	4.90		4.98	5.31	.1985	2.32	5.07
36	-35	5.82	-.4983	.01	5.98		5.01	5.02	.2010	1.76	4.77
48	-45	6.40	-.5635	-.03	6.74		5.03	4.80	.1968	1.42	4.51
60	-55	6.97	-.6030	-.02	7.46		4.98	4.60	.2003	1.26	4.22
72	-65	7.35	-.6422	-.14	7.85		4.92	4.45	.1876	1.08	4.05

ALTITUDE (KMH) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
HR	8.53	4.89	.1054	1.43	4.37	620	8.93	8.93	1.33		
12	-14	3.33	-.3841	.01	3.21		3.89	4.55	.1319	1.25	4.04
24	-24	3.96	-.4286	.02	3.82		3.87	4.41	.1358	1.52	3.89
36	-35	4.85	-.5175	.02	4.84		3.73	4.18	.1419	1.14	3.80
48	-45	5.23	-.5635	-.00	5.34		3.76	4.05	.1296	.93	3.43
60	-55	5.83	-.6038	-.05	5.85		3.74	3.87	.1064	.83	3.20
72	-65	6.06	-.6373	-.09	6.09		3.67	3.77	.0967	.74	3.10

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (9-214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/85 - 12/74
 ALPHA ANGLE - 50.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN X	S.D. X	P (X, YP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N
12	5.57	3.95	.1232	1.05	3.45	620			
24									
36									
48									
60									
72									

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HP	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	N
12									
24									
36									
48									
60									
72									

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HP	MEAN X	S.D. X	P (X, YP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N
12	2.67	3.62	.0947	.84	2.73	620			
24									
36									
48									
60									
72									

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HP	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	N
12									
24									
36									
48									
60									
72									

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-1.1	2.92	-0.423	-0.2	2.52	-0.549	-0.04	2.31	620	-0.6	3.07	-0.1382	.20	.02	.02	1.94
24	-2.1	2.96	-0.429	-0.2	2.57	-0.557				-0.00	3.03	-0.1372			.05	1.91
36	-3.2	3.22	-0.564	-0.3	2.85	-0.625				-0.06	2.95	-0.1253			.02	1.81
48	-4.2	3.34	-0.533	-0.2	3.10	-0.5735				-0.12	2.89	-0.1417			.03	1.71
60	-5.2	3.65	-0.582	-0.3	3.17	-0.5916				-0.18	2.78	-0.1208			.01	1.67
72	-6.2	3.71	-0.5969	-0.5	3.30	-0.7198				-0.23	2.74	-0.1039			-0.00	1.6

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
12	-0.8	3.00	-0.4600	-0.3	2.71	-0.5555	-0.36	2.46	620	-0.69	3.02	-0.1674	-1.45	-0.45	-0.10	2.04
24	-1.5	3.12	-0.4834	-0.3	2.87	-0.555				-0.66	2.96	-0.1652			-.25	1.97
36	-2.4	3.18	-0.5018	.01	3.03	-0.623				-0.74	2.94	-0.1669			-.13	1.90
48	-3.3	3.54	-0.5603	.01	3.42	-0.7304				-0.78	2.81	-0.1489			-.14	1.75
60	-3.9	3.54	-0.5661	.03	3.48	-0.7170				-0.81	2.80	-0.1393			-.11	1.71
72	-4.9	3.80	-0.6042	.03	3.56	-0.7383				-0.88	2.71	-0.1115			-0.09	1.65

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (1932/14) - VANDENBERG
MONTH OF RECORD - MAY
PERIOD OF RECORD - 1/65 - 12/74
AZIMUTH ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	-2.36	3.32	.0733	-5.1	2.22	620						-2.42	-5.5
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y
12	-1.03	2.72	-.4249	-.01	2.56	-.5788	-.0590	-.0421	-.120	3.00	.1241		-.09
24	-1.15	2.92	-.4366	-.10	2.74	-.6194	-.0519	-.0640	-.116	2.95	.1245		-.29
36	-1.22	3.12	-.4393	-.02	2.88	-.6222	-.0316	-.0184	-.120	2.88	.1046		-.20
48	-1.31	3.50	-.5845	.04	3.12	-.7024	.0728	-.0701	-.123	2.74	.0629		-.20
60	-1.39	3.56	-.5821	.04	3.19	-.7130	.0785	-.0319	-.127	2.70	.0582		-.19
72	-1.47	3.73	-.5073	.05	3.25	-.7367	.0328	-.1260	-.132	2.64	.0355		-.15

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	-2.79	3.65	.1021	-6.65	2.28	620						-2.85	-.72
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y
12	-1.12	2.98	-.4254	.01	2.70	-.5828	-.0117	-.1220	-.146	3.23	.1489		-.02
24	-1.23	3.18	-.4339	.01	2.94	-.6137	.0543	-.0680	-.142	3.26	.1353		-.34
36	-1.31	3.33	-.4833	.01	2.97	-.6451	.0394	-.1142	-.148	3.18	.1147		-.21
48	-1.41	3.65	-.5348	.03	3.27	-.7157	.1007	-.0975	-.151	3.08	.1289		-.24
60	-1.53	3.77	-.5523	.04	3.32	-.7285	.1204	-.1220	-.157	3.04	.1082		-.22
72	-1.61	3.93	-.5783	.04	3.40	-.7448	.1262	-.1232	-.151	2.98	.1038		-.21

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANCEBERG
 MONTH OF RECORD - MAY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	-2.69	4.08			.0703		-.75	2.33	620					
12	-1.11	3.00	-.3780	.02	2.77	-.5934	-.5934	.0128	-.1140	.0596	3.77	.0887	-.15	1.86
24	-.24	3.13	-.4099	.05	2.92	-.5341	-.5341	-.0074	-.0490	-.0170	3.72	.1103	-.43	1.80
36	-.32	3.28	-.4487	.07	3.07	-.5559	-.5559	.0482	-.0355	.0213	3.64	.0900	-.25	1.73
48	-.44	3.50	-.4733	.09	3.38	-.7394	-.7394	.0781	-.1184	.0114	3.57	.0839	-.24	1.56
60	-.56	3.85	-.5113	.12	3.45	-.7822	-.7822	.0899	-.1244	-.0016	3.50	.0727	-.24	1.50
72	-.66	3.96	-.5247	.11	3.43	-.7498	-.7498	.1457	-.1113	-.0221	3.46	.0369	-.24	1.52

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	-2.60	4.25			.0838		-.68	2.31	620					
12	-1.11	3.06	-.3821	.02	2.66	-.5771	-.5771	-.0158	-.0524	.0449	3.97	.1078	-.17	1.88
24	-.22	3.07	-.3779	.04	2.85	-.5223	-.5223	.0325	-.0097	-.0237	3.95	.1025	-.33	1.81
36	-.32	3.22	-.4139	.05	2.99	-.5629	-.5629	.0538	-.0769	.0053	3.88	.1009	-.23	1.75
48	-.43	3.51	-.4472	.08	3.24	-.7045	-.7045	.0755	-.0975	-.0013	3.81	.0925	-.21	1.51
60	-.54	3.81	-.4744	.10	3.44	-.7531	-.7531	.1046	-.1356	.0031	3.75	.0865	-.21	1.51
72	-.62	4.03	-.4973	.11	3.38	-.7461	-.7461	.1074	-.1396	-.0113	3.69	.0793	-.20	1.53

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - MAY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR X¹ AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	S.D. YP
	-2.31	4.67	.0151	-.59	2.49	620						-2.44	-.63	

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	-1.73	5.19	.0242	-.58	2.88	620						-1.84	-.69
											</		

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (82214) - VANDENBERG

X = UCAT T)
Y = VIAT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
1	1/55	12/74	30.0	2.22	2.33	-.5009	-2.15	2.59	520
2	1/55	12/74	30.0	1.02	3.43	-.1925	-3.83	4.41	520
3	1/55	12/74	30.0	2.72	4.12	-.3577	-2.12	5.43	520
4	1/55	12/74	30.0	4.54	5.80	-.4274	-2.57	5.53	520
5	1/55	12/74	30.0	6.17	7.28	-.3220	-2.20	7.45	520
6	1/55	12/74	30.0	7.43	8.44	-.1753	-2.31	8.08	520
7	1/55	12/74	30.0	7.72	8.84	-.0625	-2.05	9.04	520
8	1/55	12/74	30.0	10.05	10.63	-.0015	-2.28	10.22	520
9	1/55	12/74	30.0	11.27	11.72	.0022	-2.55	11.78	520
10	1/55	12/74	30.0	12.72	12.61	.0051	-2.44	11.78	520
11	1/55	12/74	30.0	14.08	13.43	.0078	-2.30	13.58	520
12	1/55	12/74	30.0	15.28	14.04	.0045	-2.57	14.05	520
1	1/55	12/74	30.0	15.31	11.17	.2797	-1.25	12.82	520
2	1/55	12/74	30.0	17.72	8.83	.5104	.00	10.51	520
3	1/55	12/74	30.0	17.22	7.00	.1718	1.45	8.56	520
4	1/55	12/74	30.0	11.17	5.86	.1725	1.61	5.53	520
5	1/55	12/74	30.0	8.53	4.89	.054	1.43	4.37	520
6	1/55	12/74	30.0	6.53	3.82	.1232	1.05	3.45	520
7	1/55	12/74	30.0	2.57	3.62	.0947	.84	2.73	520
8	1/55	12/74	30.0	2.22	3.42	.1000	.54	2.31	520
9	1/55	12/74	30.0	-1.50	3.40	.1771	-.55	2.45	520
10	1/55	12/74	30.0	-2.35	3.32	.2732	-.51	2.22	520
11	1/55	12/74	30.0	-2.73	3.65	.321	-.65	2.28	520
12	1/55	12/74	30.0	-2.58	4.08	.0713	-.75	2.33	520
1	1/55	12/74	30.0	-2.50	4.26	.0838	-.68	2.31	520
2	1/55	12/74	30.0	-2.31	4.57	.0151	-.53	2.48	520
3	1/55	12/74	30.0	-1.73	5.18	.0242	-.58	2.88	520

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATISTICS OF X, Y, XP, YP
STATION (123214) - VAN DERBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 30.0

ALTITUDE (KM) - 0

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	2.43	2.32	-0.5661	-1.88	2.37	500								
12	24	3.90	2.22	-0.8422	-0.01	2.95	2.95	-0.8234	-0.5855	3512	1.17	1.25	-0.6182	-0.93	1.85
24	36	3.97	2.37	-0.8634	-0.03	2.94	2.94	-0.8437	-0.5451	1955	1.14	2.14	-0.6358	-0.90	1.99
36	48	3.97	2.37	-0.8634	-0.04	2.92	2.92	-0.8175	-0.6026	4202	1.15	1.17	-0.5845	-0.93	1.65
48	60	3.97	2.37	-0.8634	-0.04	2.92	2.92	-0.8234	-0.6182	3745	1.15	2.08	-0.6345	-0.88	1.85
60	72	3.97	2.37	-0.8634	-0.03	2.95	2.95	-0.7328	-0.6355	4645	1.16	1.08	-0.4950	-0.84	1.60
72		3.97	2.37	-0.8634	-0.04	3.06	3.06	-0.6526	-0.5287	3402	1.13	2.04	-0.6182	-0.85	1.78

ALTITUDE (KM) - 1

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	0.80	3.15	-0.2355	-3.51	4.34	600								
12	24	2.57	3.15	-0.5727	-0.03	3.69	3.69	-0.4402	-0.1923	10320	1.08	2.58	-0.3731	-1.53	3.89
24	36	3.18	3.15	-0.5150	-0.07	4.16	4.16	-0.4932	-0.2157	1340	1.07	2.69	-0.2271	-1.60	3.74
36	48	3.27	3.15	-0.5655	-0.03	5.22	5.22	-0.6264	-0.2722	0769	1.07	2.29	-0.3882	-1.60	3.37
48	60	3.91	3.15	-0.6316	-0.11	5.35	5.35	-0.6401	-0.2513	2603	1.00	2.43	-0.1992	-1.65	3.30
60	72	4.64	3.15	-0.7474	-0.16	5.93	5.93	-0.7084	-0.1050	1569	1.05	2.09	-0.3483	-1.66	3.05
72		4.26	3.15	-0.6829	-0.15	5.85	5.85	-0.6325	-0.2321	3014	1.07	2.29	-0.1577	-1.69	3.10

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 50.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	.80	4.06	-.4029	-2.59	5.18	600						.80	-2.79
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
12	-.04	3.46	-.4313	.02	4.21	.1721	.0401	.55	3.65	-.4382	-1.12	4.68	
24	-.07	4.08	-.5067	.05	4.87	.1991	.0133	.58	3.49	-.4632	-1.09	4.50	
36	-.07	4.89	-.6037	.05	5.52	.2532	.1181	.52	3.22	-.4498	-1.14	4.19	
48	-.03	5.03	-.6245	.07	6.14	.2730	.1334	.53	3.15	-.4493	-1.13	4.10	
60	.02	5.46	-.6826	.07	6.82	.3264	.2001	.53	2.95	-.4178	-1.15	3.82	
72	.01	5.50	-.6911	.11	6.93	.3342	.1894	.54	2.91	-.4269	-1.12	3.75	

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	2.41	5.52	-.3349	-1.41	6.18	600						3.37	-1.75
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
12	-.03	3.63	-.3403	.04	4.19	.1872	-.0431	.80	5.16	-.3594	.13	5.73	
24	-.03	4.86	-.4521	.09	5.42	.1796	-.0149	.78	4.90	-.3714	-.06	5.48	
36	-.02	5.87	-.5393	.09	6.47	.2083	.0473	.76	4.63	-.3702	-.20	5.21	
48	.05	6.41	-.5915	.13	6.95	.2288	.0854	.77	4.43	-.3638	-.24	5.05	
60	.12	6.92	-.6447	.16	7.57	.2801	.1226	.73	4.19	-.3402	-.23	4.82	
72	.16	7.22	-.6763	.22	7.91	.3007	.1489	.80	4.04	-.3257	-.21	4.67	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (92214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	3.90	5.70	-0.2591	-0.52	8.94	600								
12	-0.03	4.12	-0.3227	.08	4.22	-0.3104	-0.0909	.1576		1.90	6.30	-0.2745	.90	5.53
24	-0.00	5.65	-0.4362	.13	5.91	-0.4246	-0.0725	.1566		1.91	5.99	-0.2343	.61	6.23
36	.00	6.77	-0.5226	.17	6.98	-0.4972	-0.0271	.1640		1.87	5.68	-0.3003	.44	5.98
48	.07	7.45	-0.5788	.20	7.61	-0.5444	.0089	.1791		1.88	5.43	-0.2988	.37	5.79
50	.10	8.12	-0.6328	.25	8.25	-0.5911	.0386	.2190		1.87	5.15	-0.2872	.38	5.56
72	.13	8.62	-0.6730	.29	8.75	-0.6237	.0550	.2533		1.88	4.90	-0.2732	.40	5.35

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	5.47	7.56	-0.2119	-0.19	7.75	600								
12	-0.02	4.87	-0.3412	.07	4.96	-0.3119	-0.0563	.1558		2.43	7.06	-0.2138	1.24	7.31
24	-0.02	6.50	-0.4472	.13	6.61	-0.4234	-0.0534	.1589		2.52	6.72	-0.2336	.82	6.98
36	-0.04	7.63	-0.5262	.18	7.82	-0.4976	-0.0132	.1681		2.51	6.39	-0.2435	.72	6.69
48	-0.03	8.34	-0.5754	.23	8.53	-0.5431	.0323	.1729		2.52	6.15	-0.2636	.71	6.48
50	.01	9.11	-0.6236	.30	9.18	-0.5870	.0212	.1767		2.51	5.81	-0.2850	.77	6.23
72	.05	9.65	-0.6760	.33	9.79	-0.6280	.0064	.2123		2.50	5.54	-0.2563	.80	5.98

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	MEAN YP	S.D. YP
12	6.94	8.51	-0.1842	.02	8.90	600	2.97	7.99	-0.1883	1.46	8.45	7.39	-0.60	1.17	8.05
24							3.06	7.62	-0.2098	1.17	8.05			1.02	7.40
36							3.08	6.97	-0.2524	1.02	7.16			1.07	6.16
48							3.08	6.60	-0.2542	1.07	6.16			1.08	6.96
60															
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 7

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	MEAN YP	S.D. YP
12	8.54	9.51	-0.1565	.21	10.18	600	3.61	8.95	-0.1586	1.53	9.66	9.07	-0.49	1.30	9.14
24							3.72	8.52	-0.1876	1.30	9.14			1.16	8.69
36							3.75	8.18	-0.2139	1.16	8.41			1.17	8.41
48							3.79	7.43	-0.2292	1.22	8.19			1.22	8.19
60							3.79	7.14	-0.2214	1.28	7.96				
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
10.15	10.83	-1.110	.17	11.78	500									
12	6.53	7.73	-3237	10.56	.0311	-.0256	4.27	10.20	-1234	1.05	11.11			
24	9.15	10.82	-4587	.0359	.0094	-.0388	4.43	9.68	-1477	.86	10.46			
26	10.57	12.81	-5226	.0443	.0355	-.0505	4.47	9.26	-1714	.88	9.83			
48	11.23	13.70	-5742	.0332	.0132	-.0523	4.53	8.85	-1849	.96	9.58			
60	12.88	14.15	-6182	-.0358	.0612	-.0533	4.58	8.48	-1818	1.13	9.38			
72	13.46	14.63	-6514	-.0363	.0382	-.0541	4.57	8.16	-1736	1.25	9.11			

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
10.71	-1.56

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	P (X, YP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
11.74	11.78	-.0905	.58	13.39	500									
12	6.81	9.23	-3234	.0418	-.0114	-.0193	4.97	11.16	-1081	.81	12.56			
24	9.72	12.53	-4732	.0539	-.0259	-.0345	5.14	10.52	-1322	.81	11.82			
26	11.45	14.78	-5122	.0540	-.0447	-.0486	5.13	10.12	-1623	.77	11.13			
48	12.77	15.73	-5657	.0523	-.0170	-.0490	5.23	9.70	-1670	.96	10.85			
60	13.77	16.32	-6120	.0444	.0238	-.0503	5.25	9.31	-1536	1.32	10.58			
72	14.43	16.75	-6412	-.0505	.0380	-.0516	5.32	8.97	-1478	1.56	10.34			

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
12.36	-.23

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QUADRIVARIATE AND STATION (93214)	CONDITIONAL BIVARIATE - VANDENBERG	STATISTICS OF X, Y, XP, YP	
MONTH OF RECORD	- JUNE	X = U(AT T)	
PERIOD OF RECORD	- 1/65 - 12/74	Y = V(AT T)	
ALPHA ANGLE	- 90.0	XP = U(AT T + DT) - U(AT T)	
		YP = V(AT T + DT) - V(AT T)	

ALTITUDE : (K) - 10

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
•	•
•	•

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ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

- • CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
- •

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVE Y	
	15.45	12.71	.0228	1.47	15.14	500	16.10	.75	
	MEAN XP	S.D. XP	MEAN YP	S.D. YP	R (XP,Y)	R (YP,X)	S.D. XP	MEAN YP	S.D. YP
DT	- .06	7.96	.09	- .3434	.0784	-.0799	12.00	-.49	14.19
HR	- .10	10.79	.15	-.4548	.1036	-.0924	11.41	.13	13.46
	- .10	12.56	.21	-.5295	.1516	-.1171	10.92	.47	12.83
	.01	3.93	.28	-.5714	.1367	-.1107	10.48	.66	12.41
	.10	15.09	.42	-.6147	.0878	-.0677	10.03	1.11	12.09
	.19	15.99	.65	-.6298	.0547	-.0328	9.58	1.44	11.76

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATISTICS OF X, Y, XP, YP
STATION (19214) - VANCOUVER
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (X) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	HP	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	GIVEN X	P (XP, YP)	GIVEN Y	MEAN YP	S.D. YP
12	24	17.24	12.80	.0855	2.23	14.57	600										
12	24	7.94	3.12	.09	3.08	12.81		7.29	3.08	.0739	8.23	12.12	17.97	.0623	1.62	17.97	1.62
24	36	10.27	4.32	.15	3.28	11.57		11.57	4.32	.0986	8.22	11.57		.0432			13.83
36	48	12.56	5.15	.25	3.55	10.32		10.32	5.15	.1214	7.92	11.57		.0245			13.13
48	60	14.22	5.62	.36	3.81	9.56		9.56	5.62	.1493	8.23	10.32		.0151			12.56
60	72	15.23	6.15	.50	4.17	8.21		8.21	6.15	.1852	8.23	10.32		.0056			12.14
72		16.20	6.67	.73	4.52	6.15		6.15	6.67	.2357	8.23	9.56		.0032			11.22
																	11.51

ALTITUDE (Y) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	HP	MEAN Y	S.D. Y	P (X, Y)	MEAN XP	S.D. XP	N	MEAN YP	S.D. YP	P (XP, YP)	MEAN XP	S.D. XP	GIVEN X	P (XP, YP)	GIVEN Y	MEAN YP	S.D. YP
12	24	17.24	11.55	.0578	3.04	13.03	600										
12	24	7.97	3.12	.09	3.08	12.81		7.29	3.08	.0739	8.23	12.12	17.25	.0623	2.62	17.25	2.62
24	36	10.27	4.32	.15	3.28	11.57		11.57	4.32	.0986	8.22	11.57		.0432			12.48
36	48	12.56	5.15	.25	3.55	10.32		10.32	5.15	.1214	7.92	11.57		.0245			11.34
48	60	14.22	5.62	.36	3.81	9.56		9.56	5.62	.1493	8.23	10.32		.0151			11.23
60	72	15.23	6.15	.50	4.17	8.21		8.21	6.15	.1852	8.23	10.32		.0056			11.06
72		16.20	6.67	.73	4.52	6.15		6.15	6.67	.2357	8.23	9.56		.0032			10.77
																	10.51

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

STATION (93214) - VANGENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
		15.31	9.34	.0754	3.48	10.69	600	6.87	8.92	.0696	1.14	10.30
12		-.06	5.52	.09	-.2670	.0824		6.76	8.60	.0528	1.47	9.85
24		-.08	7.23	.18	-.3867	.1480		6.71	8.22	.0269	1.89	9.13
36		-.07	8.79	.28	-.4662	.1978		6.69	7.87	.0088	2.26	8.90
48		-.04	9.87	.42	-.5204	.1959		6.65	7.51	-.0023	2.50	8.74
60		-.03	10.93	.57	-.5540	.1713		6.62	7.21	-.0086		
72		-.03	11.5	.75	-.5753	.1482						

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 16.97
 3.08

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
		12.35	7.48	.0104	3.20	8.20	600	5.77	7.13	.0056	2.30	7.91
12		-.04	4.49	.06	-.2640	.0184		5.86	6.88	-.0177	2.33	7.80
24		-.06	5.85	.15	-.3741	.1227		5.83	6.62	-.0375	2.25	7.30
36		-.07	6.87	.24	-.4551	.1423		5.77	6.35	-.0592	2.23	7.05
48		-.10	7.74	.36	-.5117	.1419		5.75	6.05	-.0728	2.21	6.85
60		-.11	8.63	.45	-.5509	.1131		5.72	5.81	-.0788	2.28	6.70
72		-.15	9.24	.58	-.5763	.0863						

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 12.82
 2.77

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (197214) - VANDEBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 30.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	XP, YP	P (XP, Y)	R	MEAN YP	S.D. YP	P (YP, X)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	24	8.50	5.77	-0.0894	2.46	6.04	600	-0.05	3.97	-0.3395	0.08	3.35	-0.2925	0.095	0.0247	0.0247	0.0247	4.05	5.42	-0.0783	1.73	5.77	5.42	-0.0783	1.73	5.77
24	35																									
35	48																									
48	60																									
60	72																									
72																										

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	HR	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	P (Y, YP)	XP, YP	P (XP, Y)	R	MEAN YP	S.D. YP	P (YP, X)	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12	24	4.77	4.75	-0.0942	1.67	4.51	600	-0.05	3.97	-0.3395	0.08	3.35	-0.2925	0.095	0.0247	0.0247	0.0247	4.05	5.42	-0.0783	1.73	5.77	5.42	-0.0783	1.73	5.77
24	35																									
35	48																									
48	60																									
60	72																									
72																										

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.82	3.85	.02	1.15	3.18	600								
24														
36														
48														
60														
72														

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
1.01	1.03

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-1.99	3.34	.03	1.15	3.18	600								
24														
36														
48														
60														
72														

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
-1.88	.50

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (19214) - VANDENBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	20	-4.13	3.14	-0.0373	.25	2.14				600					
35	48														
60	72														

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
-4.05	.15

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	20	-5.58	3.05	-0.0593	.05	2.02				600					
35	48														
60	72														

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
-6.52	-.01

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
		-6.86	3.04	-0.0372	-1.17	2.03	600										
12		-1.10	3.00	-0.5004	0.03	2.58		-0.10	3.00	-0.0996	-0.349	2.63	-0.182	2.63	-0.0828	0.33	1.56
24		-1.20	2.95	-0.4979	0.03	2.63		-0.20	2.95	-0.0152	-0.345	2.63	-0.0828	2.63	-0.0828	-0.26	1.56
36		-1.30	3.20	-0.5353	0.02	2.75		-0.30	3.20	-0.0791	-0.355	2.57	-0.0943	2.57	-0.0943	0.05	1.50
48		-1.40	3.31	-0.5525	0.01	2.80		-0.40	3.31	-0.137	-0.360	2.53	-0.0887	2.53	-0.0887	-0.08	1.48
60		-1.49	3.41	-0.5681	0.02	2.97		-0.49	3.41	-0.150	-0.365	2.50	-0.1033	2.50	-0.1033	-0.09	1.40
72		-1.59	3.57	-0.6015	0.03	2.96		-0.59	3.57	-0.182	-0.366	2.42	-0.1140	2.42	-0.1140	-0.23	1.42

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X
 Y
 -6.83 -0.17

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
		-7.92	3.21	-0.0250	-0.35	1.91	600										
12		-1.10	3.18	-0.4932	0.01	2.58		-1.10	3.18	-0.0866	-0.407	2.79	-0.0477	2.79	-0.0477	0.16	1.41
24		-1.19	3.33	-0.5270	0.01	2.65		-1.19	3.33	-0.0057	-0.401	2.73	-0.0452	2.73	-0.0452	-0.20	1.38
36		-1.30	3.38	-0.5315	0.01	2.64		-1.30	3.38	-0.0189	-0.411	2.72	-0.0398	2.72	-0.0398	0.01	1.38
48		-1.39	3.59	-0.5698	0.00	2.74		-1.39	3.59	-0.0242	-0.412	2.64	-0.0391	2.64	-0.0391	-0.02	1.33
60		-1.47	3.67	-0.5811	0.01	2.81		-1.47	3.67	-0.0158	-0.415	2.61	-0.0894	2.61	-0.0894	-0.11	1.30
72		-1.60	3.69	-0.5835	0.02	2.70		-1.60	3.69	-0.067	-0.423	2.61	-0.0607	2.61	-0.0607	-0.01	1.35

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X
 Y
 -7.89 -0.37

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QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION 132214 - VANDENBERG
MONTH OF RECORD - JUNE
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 30.0

ALTITUDE (M) - 24

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N
-8.53	3.34	-0.45	-3.32	1.92	500

DT HP	MEAN XP	S.D. XP	P (Y, XP)	MEAN YP	S.D. YP	P (X, YP)	MEAN X	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	-1.11	2.39	-0.515	1.00	2.57	-0.673	-0.672	0.009	0.009	0.009	1.42
24	-1.20	2.02	-0.501	1.00	2.34	-0.637	0.008	-0.025	-0.025	0.27	1.41
36	-1.24	2.27	-0.491	1.00	2.53	-0.630	0.008	-0.022	-0.022	0.21	1.38
48	-1.24	2.26	-0.488	1.00	2.55	-0.627	0.008	-0.024	-0.024	0.28	1.40
60	-1.24	2.11	-0.483	1.00	2.16	-0.622	0.008	-0.022	-0.022	0.03	1.34
72	-1.25	2.54	-0.4835	1.00	2.76	-0.627	0.008	-0.023	-0.023	0.14	1.38

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
-8.52	-3.37

ALTITUDE (M) - 25

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N
-8.35	2.57	-0.2514	-3.31	2.03	500

DT HP	MEAN XP	S.D. XP	P (Y, XP)	MEAN YP	S.D. YP	P (X, YP)	MEAN X	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	-1.13	2.39	-0.4872	1.00	2.72	-0.637	0.008	0.009	0.009	0.28	1.50
24	-1.24	2.03	-0.478	1.00	2.32	-0.630	0.008	-0.022	-0.022	0.32	1.46
36	-1.24	2.27	-0.475	1.00	2.53	-0.627	0.008	-0.022	-0.022	0.11	1.44
48	-1.24	2.26	-0.473	1.00	2.55	-0.627	0.008	-0.024	-0.024	0.09	1.46
60	-1.24	2.11	-0.473	1.00	2.16	-0.622	0.008	-0.022	-0.022	0.13	1.40
72	-1.25	2.54	-0.4735	1.00	2.76	-0.627	0.008	-0.023	-0.023	0.13	1.45

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
-8.33	-3.29

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JUNE
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
	-9.88	3.80	-.1081	-.18	2.16	500										
12	-.11	2.96	-.3946	-.00	2.79		-.00	2.79	-.0447	-.0183	-.0492	-.4.92	3.49	-.1495	-.34	1.65
24	-.26	3.06	-.4142	-.01	3.02		-.01	3.02	-.6951	-.0446	-.0218	-.4.90	3.46	-.1470	-.04	1.56
36	-.39	3.30	-.4592	.02	2.97		.02	2.97	-.7031	-.0322	-.0181	-.4.84	3.38	-.1631	.17	1.54
48	-.53	3.49	-.4795	.05	3.00		.05	3.00	-.7183	-.0382	-.0107	-.4.98	3.33	-.1614	.24	1.50
60	-.68	3.62	-.5060	.08	3.12		.08	3.12	-.7279	-.0306	-.0213	-.4.96	3.28	-.1901	.19	1.48
72	-.81	3.74	-.5283	.09	3.06		.09	3.06	-.7202	-.0371	.0094	-.4.98	3.23	-.1762	.04	1.50

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
-9.95	-.17

ALTITUDE (KM) - 27

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
	-10.08	3.87	-.0108	-.20	2.15	500										
12	-.13	3.18	-.4268	-.02	2.75		-.02	2.75	-.6425	-.0360	-.0325	-.4.93	3.50	-.0074	-.28	1.64
24	-.26	3.18	-.4275	.01	2.89		.01	2.89	-.6810	.0192	-.0336	-.4.97	3.50	-.0273	-.14	1.57
36	-.41	3.34	-.4687	.00	2.89		.00	2.89	-.6885	.0346	-.0307	-.4.81	3.42	-.0433	-.04	1.56
48	-.53	3.46	-.4866	.02	3.00		.02	3.00	-.7086	.0134	-.0249	-.4.86	3.38	-.0366	.02	1.51
60	-.65	3.62	-.5192	.06	3.06		.06	3.06	-.7083	.0359	-.0551	-.4.85	3.31	-.0410	.23	1.51
72	-.79	3.77	-.5353	.05	3.05		.05	3.05	-.7050	.0395	-.0377	-.4.96	3.27	-.0430	-.01	1.52

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
-10.09	-.22

BIVARIATE NORMAL STATISTICS OF X, Y

DEBENSONA - (4126) MCILV.5

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ALTITUDE (KM) - 1

DT HR	QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP					CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP							
	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	.25	2.54	-.2084	-1.90	3.87	620	.26	-1.80					
12	-.01	3.36	-.6822	-.4238	.0895				.12	1.90	-.3350	-1.01	3.51
24	-.00	2.60	-.5189	-.4949	.3017				.15	2.17	-.1692	-1.03	3.36
36	.01	3.78	-.7486	-.6363	.1132				.13	1.68	-.2585	-1.04	2.99
48	.01	3.15	-.6279	-.5824	.3569				.16	1.97	-.0877	-1.05	2.82
60	.02	3.93	-.7757	-.7325	.1944				.15	1.60	-.2162	-1.02	2.63
72	.03	3.25	-.6460	-.7252	.3715				.18	1.93	-.0602	-1.02	2.69

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR YP AND YP											
DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	DT	HR	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
		-0.25	3.04	-0.1869	-0.16	3.92	620	-0.39	.10												

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
		MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y										
		.88	4.03	-.1257	1.60	4.32	620	.65	1.87										
		MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (XP, Y)	R (YP, X)			MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP				
DT	HR	-01	2.93	-.3655	-.3724	.0250	.0320	-.0575			.43	3.75	-.1497	.70	4.05				
12		-01	3.57	-.4493	-.4634	-.0922	.0930	-.0159			.43	3.59	-.1367	.72	3.81				
24		.01	4.13	-.5244	-.5701	-.1503	.0999	.0578			.52	3.43	-.1219	.67	3.55				
36		-03	4.38	-.5611	-.6152	-.1925	.1083	.1068			.53	3.34	-.1006	.64	3.40				
48		-08	4.68	-.6021	-.6472	-.1978	.1026	.1290			.52	3.22	-.0944	.61	3.29				
60		-14	4.85	-.6243	-.6595	-.1978	.0939	.1484			.52	3.15	-.0945	.58	3.24				
72																			

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4									
QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN		
							X	Y	
	1.76	4.86	.0035	2.82	4.66	620	1.48	3.14	
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (YP, X)	S.D. YP
12	-.02	3.33	-.3537	-.01	3.37	-.3612	.0741	-.0988	4.33
24	-.05	4.27	-.4579	-.01	4.27	-.4622	-.0037	-.0681	4.12
36	-.06	5.04	-.5399	-.03	5.05	-.5491	-.0413	-.0095	3.89
48	-.10	5.43	-.5812	-.03	5.53	-.5989	-.0519	-.0281	3.73
60	-.13	5.73	-.6129	-.05	5.75	-.6229	-.0377	-.0250	3.65
72	-.19	5.90	-.6337	-.07	5.93	-.6421	-.0100	-.0197	3.57

ALTITUDE (KM) - 5									
QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP									
	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN		
							X	Y	
	2.26	5.46	.0642	3.40	4.83	620	2.00	3.82	
CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (YP, X)	S.D. YP
12	-.03	3.49	-.3318	.02	3.50	-.3647	.0478	-.0942	4.48
24	-.09	4.42	-.4222	.01	4.49	-.4721	.0513	-.0960	4.24
36	-.10	5.37	-.5089	.01	5.28	-.5592	.0641	-.0720	4.00
48	-.14	5.81	-.5500	-.01	5.71	-.6023	.0723	-.0734	3.85
60	-.16	6.32	-.5975	-.02	6.11	-.6453	.0660	-.0684	3.69
72	-.20	6.61	-.6253	-.07	6.27	-.6636	.0698	-.0650	3.61

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATION (93214) - VANDENBERG
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-0.05	3.90	-0.3243	0.03	3.78	-0.3617	-0.3617	0.0196	0.830	-0.0971	5.88	0.0916	1.99	4.91
24	-0.10	5.15	-0.4270	0.05	5.06	-0.4221	-0.4221	0.0101	0.074	-0.0795	5.82	0.0998	1.89	4.82
36	-0.14	6.12	-0.5332	0.06	5.94	-0.5052	-0.5052	0.0032	-0.0851	-0.0851	5.39	0.0855	1.78	4.34
48	-0.17	6.75	-0.5528	0.05	6.39	-0.6124	-0.6124	0.0980	-0.0314	-0.0829	5.20	0.0776	1.73	4.18
60	-0.20	7.25	-0.5940	0.07	6.68	-0.6439	-0.6439	0.0819	-0.0379	-0.0661	5.02	0.0869	1.71	4.05
72	-0.22	7.64	-0.6275	0.02	6.81	-0.6607	-0.6607	0.0886	-0.0407	-0.0660	4.86	0.0919	1.67	3.97

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-0.07	4.18	-0.3091	0.03	4.34	-0.3578	-0.3578	0.0483	0.616	-0.0856	6.62	0.0497	2.38	5.66
24	-0.11	5.75	-0.4182	0.08	5.79	-0.4759	-0.4759	0.0268	0.063	-0.0730	6.33	0.0558	2.28	5.33
36	-0.16	6.73	-0.4878	0.12	6.78	-0.5600	-0.5600	0.0533	0.133	-0.0598	6.09	0.0524	2.17	5.03
48	-0.19	7.54	-0.5468	0.12	7.35	-0.6066	-0.6066	0.0911	-0.0386	-0.0586	5.85	0.0576	2.09	4.84
60	-0.19	8.12	-0.5881	0.17	7.69	-0.6349	-0.6349	0.0880	-0.0593	-0.0394	5.65	0.0414	2.06	4.70
72	-0.21	8.47	-0.6142	0.13	7.77	-0.6416	-0.6416	0.1095	-0.0719	-0.0451	5.51	0.0337	2.05	4.67

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1932/4) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	5.03	7.30	.0402	5.86	6.95	620						4.47	6.69
DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.09	4.74	-.3060	.04	4.77	-.3421	.0628	-.0736	2.13	7.51	.0384	2.93	6.51
24	-.14	6.33	-.4080	.10	6.44	-.4646	.0853	-.0628	2.45	7.21	.0305	2.72	6.15
36	-.18	7.95	-.4793	.14	7.43	-.5378	.0931	-.0824	2.61	6.93	.0197	2.63	5.86
48	-.25	8.57	-.5432	.16	8.05	-.5813	.1067	-.0759	2.68	6.60	.0077	2.56	5.65
60	-.26	9.30	-.5980	.25	8.31	-.5999	.0866	-.0637	2.77	6.32	.0209	2.57	5.56
72	-.28	9.68	-.6239	.25	8.47	-.6033	.0971	-.0276	2.80	6.17	.0176	2.58	5.50

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	6.17	8.72	.0001	7.29	7.80	620						5.56	8.20
DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	-.09	5.22	-.3044	.06	5.24	-.3368	.0456	-.0463	2.87	8.31	-.0066	3.46	7.34
24	-.13	6.98	-.4074	.14	7.16	-.4528	.0633	-.0358	3.20	7.97	-.0176	3.26	6.92
36	-.19	8.52	-.4905	.22	8.31	-.5385	.0717	-.0241	3.38	7.60	-.0304	3.16	6.58
48	-.26	9.66	-.5627	.26	8.92	-.5751	.0445	-.0578	3.47	7.21	-.0281	3.11	6.29
60	-.29	10.41	-.6110	.33	9.17	-.5911	.0383	-.0544	3.52	6.89	-.0182	3.16	6.24
72	-.33	10.86	-.6361	.31	9.33	-.5996	.0531	.0017	3.41	6.71	-.0250	3.23	6.24

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	R (XP,YP)	GIVEN Y	S.D. YP
12	7.28	9.47	-0.109	9.00	8.60	620	3.82	9.08	-0.0244	3.96	8.15	5.62	-0.0449	10.02	7.00
24															
36															
48															
60															
72															

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	R (XP,YP)	GIVEN Y	S.D. YP
12	8.53	9.98	-0.191	10.92	9.35	620	4.68	9.58	-0.0304	4.61	8.90	7.98	-0.0477	12.10	7.86
24															
36															
48															
60															
72															

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	9.46	9.98	-0.163	12.23	9.69	620								
24														
36														
48														
60														
72														

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (X,XP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	9.65	9.54	0.0394	12.21	9.29	620					
24											
36											
48											
60											
72											

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QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (32214) - VANCEBERG
MONTH OF RECORD - JULY
PER DO OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 30.0

ALPHA ANGLE (deg) - 30

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT LP	8.53	8.47	.1050	11.15	8.28	820	8.20	12.33	8.13	.0993	4.83	7.86
12	-1.03	4.73	-.2822	.08	1.59	1.03	4.43		4.43		4.43	7.86
24	-1.18	5.13	-.3588	.18	5.03	1.25	4.43		4.43		4.43	7.86
36	-1.03	7.43	-.4458	.22	7.55	1.47	4.43		4.43		4.43	7.86
48	-1.43	8.23	-.4811	.22	7.47	1.47	4.43		4.43		4.43	7.86
60	-1.51	9.15	-.5320	.20	8.28	1.47	4.43		4.43		4.43	7.86
72	-1.58	9.73	-.5658	.23	8.35	1.47	4.43		4.43		4.43	7.86

ALPHA ANGLE (deg) - 30

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	P (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
DT LP	6.15	7.07	.1810	8.55	5.18	820	5.88	9.41	5.71	.1539	3.93	5.89
12	-1.11	4.50	-.3172	-.33	3.77	1.03	2.93		2.93		2.93	5.89
24	-1.17	4.95	-.3543	.11	4.28	1.25	2.93		2.93		2.93	5.89
36	-1.28	5.32	-.4188	.12	5.22	1.47	2.93		2.93		2.93	5.89
48	-1.37	6.62	-.4554	.12	5.55	1.47	2.93		2.93		2.93	5.89
60	-1.44	7.54	-.5288	.14	6.35	1.47	2.93		2.93		2.93	5.89
72	-1.48	7.79	-.5423	.14	6.35	1.47	2.93		2.93		2.93	5.89

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QUADRATIC NORMAL STATISTICS OF X.Y.XP.YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

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ADVANCEMENT IN THE STATISTICS OF X.Y.P. OF

CONCILIARY BIVARIATE NORMAL STATISTICS
FOR YP AND YP

MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. X _Y	R (X _Y ,Y)	MEAN Y _X	S.D. Y _X
-71	3.93	.2218	3.89	3.57	820	-.72	4.02				
MEAN Y _X	S.D. Y _X	P (Y,X)	MEAN X	S.D. X				MEAN X _Y	R (X _Y ,X)		
-.67	3.22	.4140	-.04	3.14				-.26	-.0537	1.89	2.82
-.13	3.08	.3247	-.01	3.11				-.52	-.0715	2.22	3.22
-.19	3.73	.4257	-.01	3.24				-.33	-.0834	1.81	2.78
-.25	3.35	.4705	-.03	3.89				-.42	-.0581	1.87	2.89
-.30	4.57	.5473	-.02	4.83				-.26	-.0974	1.93	2.51
-.31	4.61	.5773	-.05	4.28				-.23	-.0652	1.85	2.83

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (32214) - JANUARY 1960
 WORK OF RECORD - 21
 PERIOD OF RECORD - 1/60 - 12/74
 ALPHA ANGLE - 30.0

ALPHA ANGLE (deg) - 30.0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	P (Y,XP)	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN X	MEAN GIVEN Y	S.D. GIVEN Y
12	-3.43	3.23	.2395	2.26	2.78	620									
24															
36															
48															
60															
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	P (YP,X)	MEAN GIVEN XP	S.D. GIVEN XP	MEAN GIVEN YP	S.D. GIVEN YP
12	-1.05	2.99	.1455	1.01	3.34	.1743	-1.02	2.91	1.27	2.23
24	-1.12	2.71	.1227	1.01	2.88	.1472	-1.03	2.97	1.27	2.37
36	-1.13	2.36	.1023	1.01	2.52	.1233	-1.03	2.83	1.27	2.15
48	-1.22	2.15	.0841	1.01	2.12	.1053	-1.03	2.75	1.27	2.20
60	-1.25	2.07	.0732	1.01	2.03	.0977	-1.03	2.64	1.27	2.10
72	-1.26	2.07	.0732	1.01	2.03	.0977	-1.03	2.64	1.27	2.10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	P (X,Y)	MEAN Y	S.D. Y	P (Y,XP)	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN X	MEAN GIVEN Y	S.D. GIVEN Y
12	-5.61	2.71	.1553	1.43	2.13	620									
24															
36															
48															
60															
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	MEAN XP	S.D. XP	P (XP,Y)	MEAN YP	S.D. YP	P (YP,X)	MEAN GIVEN XP	S.D. GIVEN XP	MEAN GIVEN YP	S.D. GIVEN YP
12	-1.05	2.99	.1455	1.01	3.34	.1743	-1.02	2.91	1.27	2.23
24	-1.12	2.71	.1227	1.01	2.88	.1472	-1.03	2.97	1.27	2.37
36	-1.13	2.36	.1023	1.01	2.52	.1233	-1.03	2.83	1.27	2.15
48	-1.22	2.15	.0841	1.01	2.12	.1053	-1.03	2.75	1.27	2.20
60	-1.25	2.07	.0732	1.01	2.03	.0977	-1.03	2.64	1.27	2.10
72	-1.26	2.07	.0732	1.01	2.03	.0977	-1.03	2.64	1.27	2.10

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (932141) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-04	2.80	-1.5639	.02	2.74	-.6929	-7.34	2.49	.1657	.85	1.99	620	-7.38	.84	-3.58	2.05	.2101	.81	1.42
24	-07	2.64	-1.5181	.02	2.50	-.6338									-3.84	2.13	.1609	.24	1.53
36	-10	2.94	-1.5288	.01	2.70	-.6931									-3.67	2.01	.1610	.64	1.44
48	-13	3.01	-1.5390	-.02	2.80	-.7065									-3.73	2.00	.1511	.57	1.40
60	-14	3.23	-1.6495	-.05	2.85	-.7242									-3.72	1.90	.1463	.48	1.37
72	-14	3.21	-1.6445	-.05	2.75	-.6974									-3.65	1.90	.1280	.64	1.42

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-02	2.78	-1.5604	-.00	2.82	-.6567	-9.10	2.49	.0821	.44	1.99	620	-9.09	.44	-4.54	2.05	.1321	.78	1.49
24	-05	2.55	-1.5154	-.01	2.64	-.6651									-4.61	2.13	.0699	-.06	1.48
36	-09	2.84	-1.5789	-.01	2.68	-.6775									-4.50	2.02	.0904	.61	1.46
48	-11	3.00	-1.5073	-.04	2.74	-.6932									-4.59	1.97	.1149	.21	1.43
60	-14	3.12	-1.6231	-.03	2.68	-.6832									-4.64	1.94	.0758	.36	1.45
72	-14	3.21	-1.5350	-.04	2.72	-.6932									-4.67	1.91	.0943	.22	1.43

QUADRAVARIATE AND STATION (93214)	CONDITIONAL BIVARIATE - VANDENBERG	STATISTICS OF	X. Y. XP. YP
MONTH OF RECORD	- JULY	X = U(IAT T)	
PERIOD OF RECORD	- 1/65 - 12/74	Y = V(IAT T)	
ALPHA ANGLE	- 90.0	XP = U(IAT T + DT)	- U(IAT T)
		YP = V(IAT T + DT)	- V(IAT T)

ALTIMETER (KM) - 22

[illegible]

ALTITUDE (KM) - 23

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP				CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP			
MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
-11.96	2.54	.0085	-1.12	2.00	620	-11.97	-.19
MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	S.D. XP	R (XP,YP)
-.00	2.71	-.5398	.01	2.81	-.1660	2.15	-.0472
-.03	2.64	-.5116	.02	2.53	-.0833	2.18	-.0399
-.05	2.94	-.5613	.04	2.62	-.1090	2.10	-.0207
-.09	3.07	-.5322	.04	2.85	-.0947	2.66	-.0375
-.17	3.18	-.5315	.05	2.84	-.1352	2.06	-.0328
-.17	3.30	-.5335	.05	2.89	-.0712	2.03	-.0620
MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP
-.00	2.71	-.5398	-.7053	.0971	-.1660	-5.95	2.15
-.03	2.64	-.5116	-.6335	.1073	-.0833	-6.08	2.18
-.05	2.94	-.5613	-.7032	.0503	-.1090	-6.17	2.10
-.09	3.07	-.5322	-.7131	.0724	-.0947	-6.22	2.66
-.17	3.18	-.5315	-.7113	.0538	-.1352	-6.44	2.06
-.17	3.30	-.5335	-.7231	.0865	-.0712	-6.48	2.03
MEAN YP	S.D. YP	R (XP,Y)	R (YP,X)	S.D. YP	R (XP,YP)	MEAN YP	S.D. YP
.85	1.40	-.0472	.0224	.85	-.0472	.85	1.40
.13	1.55	-.0399	-.0429	.13	-.0399	.13	1.55
.59	1.41	-.0207	.0297	.59	-.0207	.59	1.41
.33	1.40	-.0375	.0265	.33	-.0375	.33	1.40
.39	1.39	-.0328	.0383	.39	-.0328	.39	1.39
.06	1.38	-.0620	-.0519	.06	-.0620	.06	1.38

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - JULY
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		-13.25	2.61	.0240	-.17	2.12	620						-13.19	-.18					
12		-.01	2.75	-.5243	-.01	2.90		-.01	2.90	-.0110	-.0686				-6.70	2.22	-.0371	.63	1.54
24		-.04	2.74	-.5174	-.00	2.81		-.00	2.81	-.1066	-.0727				-6.75	2.23	-.0208	-.06	1.59
36		-.05	2.93	-.5501	.00	2.95		.00	2.95	.0777	-.1167				-6.77	2.18	-.0161	.52	1.53
48		-.07	3.10	-.5245	.00	2.96		.00	2.96	.0963	-.0735				-6.81	2.12	-.0350	-.02	1.53
60		-.14	3.19	-.5918	.01	2.93		.01	2.93	.0595	-.0359				-6.82	2.10	-.0257	.40	1.51
72		-.16	3.38	-.6193	.02	2.95		.02	2.95	.0562	-.0475				-7.02	2.05	-.0361	-.01	1.51

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
		-14.36	2.76	.0014	.06	2.09	620						-14.31	.02					
12		-.03	2.71	-.4968	.00	2.90		.00	2.90	-.0619	-.0771				-7.13	2.40	-.0387	.40	1.50
24		-.07	2.75	-.5033	.03	2.79		.03	2.79	.0379	-.0213				-7.20	2.39	-.0220	.09	1.54
36		-.09	3.06	-.5523	.02	2.87		.02	2.87	.1148	-.1271				-7.23	2.30	-.0819	.53	1.50
48		-.12	3.08	-.5505	.02	2.88		.02	2.88	.0770	-.0437				-7.37	2.31	-.0555	-.03	1.49
60		-.17	3.25	-.5768	.03	2.91		.03	2.91	.1333	-.0900				-7.44	2.26	-.0974	.01	1.45
72		-.23	3.31	-.5750	.04	2.82		.04	2.82	.0711	-.0687				-7.56	2.25	-.0584	.24	1.49

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - JULY
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-15.11	2.88	.0669	.25	2.11	620				-15.02	.14					
24	-.03	2.90	.5236	.01	2.85	-.6736	.1599	-.1492				-7.53	2.49	.0218	.65	1.56
36	-.06	2.83	-.4828	.02	2.80	-.6630	.1943	-.1313				-7.65	2.52	.0143	.21	1.59
48	-.11	3.32	-.5635	.00	2.93	-.6933	.1876	-.1554				-7.67	2.37	-.0066	.43	1.52
60	-.13	3.33	-.5653	.00	2.97	-.7013	.1480	-.1252				-7.79	2.37	.0043	.38	1.51
72	-.17	3.57	-.6053	.00	2.93	-.7087	.1237	-.1032				-7.85	2.29	.0217	.31	1.49
	-.19	3.55	-.5954	.01	2.92	-.7001	.1289	-.1244				-7.91	2.31	.0076	.42	1.51

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-15.58	3.03	.0456	.15	2.17	620				-15.52	.06					
24	-.05	2.89	.4718	.01	2.30	-.6653	.1652	-.0794				-7.89	2.67	-.0359	.55	1.62
36	-.09	2.99	-.4838	.00	3.01	-.6826	.1454	-.1043				-7.93	2.66	-.0116	.18	1.59
48	-.15	3.43	-.5569	.00	3.11	-.7015	.1316	-.1205				-7.97	2.52	-.0137	.40	1.55
60	-.19	3.55	-.5784	.01	3.09	-.6964	.1245	-.0569				-7.99	2.48	-.0239	.45	1.56
72	-.23	3.55	-.5855	.02	3.12	-.7212	.1081	-.1175				-8.09	2.46	-.0109	.47	1.50
	-.27	3.76	-.6020	.01	3.12	-.7242	.1170	-.1372				-8.10	2.42	-.0186	.59	1.49

BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(IAT T)
Y = V(IAT T)

MONTH	PER. OF REC.	ALT KFT.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
7	1/65 - 12/74	0	90.0	2.03	1.93	-.4607	-1.61	1.82	620
7	1/65 - 12/74	1	90.0	.25	2.54	-.2064	-1.90	3.87	620
7	1/65 - 12/74	2	90.0	-.25	3.04	-.1869	-.16	3.92	620
7	1/65 - 12/74	3	90.0	.88	4.03	-.1257	1.60	4.32	620
7	1/65 - 12/74	4	90.0	1.76	4.86	.0035	2.82	4.66	620
7	1/65 - 12/74	5	90.0	2.26	5.46	.0642	3.40	4.83	620
7	1/65 - 12/74	6	90.0	2.90	6.24	.0961	3.94	5.29	620
7	1/65 - 12/74	7	90.0	3.83	6.98	.0503	4.72	6.08	620
7	1/65 - 12/74	8	90.0	5.03	7.90	.0402	5.85	6.95	620
7	1/65 - 12/74	9	90.0	6.17	8.72	.0001	7.29	7.80	620
7	1/65 - 12/74	10	90.0	7.28	9.47	-.0109	9.00	8.60	620
7	1/65 - 12/74	11	90.0	8.53	9.98	-.0191	10.92	9.35	620
7	1/65 - 12/74	12	90.0	9.46	9.98	-.0163	12.23	9.69	620
7	1/65 - 12/74	13	90.0	9.66	9.54	.0354	12.21	9.29	620
7	1/65 - 12/74	14	90.0	8.59	8.47	.1050	11.75	8.28	620
7	1/65 - 12/74	15	90.0	6.15	7.07	.1610	8.55	6.18	620
7	1/65 - 12/74	16	90.0	2.64	5.19	.1318	5.89	4.63	620
7	1/65 - 12/74	17	90.0	-.71	3.93	.2216	3.89	3.57	620
7	1/65 - 12/74	18	90.0	-3.43	3.29	.2395	2.26	2.78	620
7	1/65 - 12/74	19	90.0	-5.61	2.71	.1653	1.43	2.13	620
7	1/65 - 12/74	20	90.0	-7.34	2.49	.1657	.85	1.99	620
7	1/65 - 12/74	21	90.0	-9.10	2.49	.0821	.44	1.93	620
7	1/65 - 12/74	22	90.0	-10.66	2.43	.0760	.10	1.99	620
7	1/65 - 12/74	23	90.0	-11.96	2.54	.0095	-.12	2.00	620
7	1/65 - 12/74	24	90.0	-13.25	2.61	.0240	-.17	2.12	620
7	1/65 - 12/74	25	90.0	-14.36	2.76	.0014	.06	2.09	620
7	1/65 - 12/74	26	90.0	-15.11	2.88	.0659	.25	2.11	620
7	1/65 - 12/74	27	90.0	-15.58	3.03	.0456	.15	2.17	620

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N								
	2.00	2.07	-.5690	-1.51	1.85	620								
								</						

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N								
	.46	2.60	-.2910	-2.02	3.99	620						.53	-2.08	
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (XP,YP)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
DT HR	.01	3.35	-.6458	.04	3.07	-.3812	.0208	.0298	-.0866	.32	1.97	-.4317	-.94	3.68
12	.02	2.63	-.5037	.06	3.89	-.4873	.1994	-.2696	.0468	.33	2.23	-.3106	-.94	3.47
24	-.02	3.80	-.7315	.10	4.78	-.5952	.1404	-.1388	.0155	.29	1.76	-.4406	-.92	3.20
36	-.01	3.32	-.5376	.14	5.28	-.6557	.2941	-.3345	.1203	.29	1.98	-.2822	-.91	2.99
48	-.03	4.01	-.7717	.14	5.68	-.7033	.1991	-.2171	.0913	.25	1.64	-.4249	-.91	2.83
60	-.02	3.61	-.6878	.16	5.81	-.7154	.3092	-.3782	.1947	.25	1.88	-.4262	-.92	2.78
72														

ALTITUDE (KM) - 2

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

BIOMATHEMATICS

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D.
.02	3.15	- .2870	- .34	4.19	620	.13	- .37		

ALTIMETER (KM) - 3

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE NORMAL STATISTICS OF X.Y.XP.YP

[illegible]

DUALOVARIVATE AND CONDITIONAL BIVARIATE NORMAL
 STATION (32214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/74
 DATA AVERAGE - 20.2
 STATISTICS OF X, Y, XP, YP
 $\bar{X} = U(AT \text{ T})$
 $\bar{Y} = V(AT \text{ T})$
 $\bar{X}P = U(AT \text{ T} + DT) - U(AT \text{ T})$
 $\bar{Y}P = V(AT \text{ T} + DT) - V(AT \text{ T})$

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR Y_P AND Y_P									
ALTITUDE (M)									
QUANTILS OF NORMAL STATISTICS OF X, Y, X_P, Y_P									
MEAN \bar{Y}	S.D. σ_Y	P (\bar{Y}, Y)	MEAN \bar{Y}	S.D. σ_Y	N	GIVEN \bar{X}	GIVEN \bar{Y}		
1.77	4.55	-1.722	2.15	4.34	520	1.73	2.16		
MEAN \bar{X}_P	S.D. σ_{X_P}	P (\bar{X}_P, Y_P)	MEAN \bar{Y}_P	S.D. σ_{Y_P}	P (Y_P, X_P)	MEAN \bar{X}_P	S.D. σ_{X_P}	P (X_P, Y_P)	S.D. σ_{Y_P}
2.11	3.25	-0.116	-0.1017			4.25	1.37	-1.993	4.32
2.94	4.27	-0.220	-0.2372			4.02	1.35	-2.114	3.72
4.73	5.03	-0.534	-0.5435			3.83	1.23	-2.221	3.57
5.11	5.26	-0.615	-0.6117			3.78	1.12	-2.222	3.45
5.52	5.51	-0.657	-0.6555			3.55	1.13	-2.115	3.35
5.75	5.74	-0.689	-0.6881			3.53	1.12	-1.943	3.3

[illegible]

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	3.71	6.19	-0.499	2.80	5.56	620	3.54	2.65					
12	.04	3.89	-3113	-07	4.12				1.33	5.81	-0491	2.37	5.10
24	.07	4.79	-3823	-14	5.67				1.50	5.63	-0572	2.27	4.69
36	.10	5.61	-4501	-21	6.41				1.60	5.46	-0594	2.02	4.48
48	.10	6.26	-4997	-26	6.78				1.70	5.31	-0579	1.82	4.40
60	.13	6.83	-5409	-30	7.13				1.81	5.18	-0529	1.68	4.31
72	.13	7.33	-5763	-29	7.29				1.88	5.04	-0567	1.62	4.30

348

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	5.07	6.80	.0147	3.34	6.43	620	4.77	3.19					
12	.04	4.25	-3073	-08	4.90				1.97	6.38	.0268	3.29	5.83
24	.08	5.54	-4050	-18	6.50				2.19	6.12	.0133	2.79	5.44
36	.14	6.45	-4754	-26	7.12				2.27	5.89	.0189	2.50	5.27
48	.17	7.17	-5202	-33	7.61				2.41	5.74	.0204	2.24	5.14
60	.18	7.78	-5614	-40	8.04				2.47	5.57	.0166	2.11	5.00
72	.18	8.35	-5956	-36	8.32				2.53	5.41	.0239	2.10	4.95

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (92214) - VANENBERG
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, YP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X, Y)	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.05	4.68	-.2025	-.09	5.32	-.3557	3.99	7.27	520	6.62	7.42	.0032	6.18	3.97	2.75	6.96	-.0059	3.80	6.66
24	.12	5.93	-.3963	-.18	7.07	-.4761									3.02	6.72	-.0035	3.31	6.25
36	.22	7.16	-.4745	-.28	7.82	-.5252									3.10	6.43	-.0008	2.98	6.05
48	.29	8.01	-.5212	-.37	8.37	-.5537									3.25	6.25	-.0035	2.72	5.83
60	.33	8.67	-.5619	-.49	8.88	-.5553									3.36	6.07	-.0032	2.52	5.74
72	.32	9.14	-.5825	-.47	9.33	-.6156									3.44	5.95	-.0021	2.48	5.62

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X, Y)	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.11	5.03	-.2928	-.11	5.72	-.3522	4.96	7.89	620	8.28	8.20	-.0505	7.74	5.08	3.61	7.76	-.0604	4.59	7.25
24	.21	6.78	-.3958	-.21	7.70	-.4834									3.89	7.45	-.0524	3.91	6.78
36	.34	8.12	-.4738	-.32	8.56	-.5335									4.08	7.15	-.0590	3.44	6.56
48	.43	9.03	-.5211	-.41	9.06	-.5526									4.27	6.94	-.0426	3.21	6.42
60	.50	9.74	-.5593	-.53	9.69	-.6003									4.33	6.75	-.0459	3.05	6.21
72	.53	10.30	-.5866	-.54	10.22	-.6252									4.48	6.60	-.0506	3.01	6.03

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	9.88	8.96	-0.042	6.16	8.36	620						9.09	6.28					
12	.14	5.42	-.2931	-.11	5.65		-.11	5.65	-.1348	-.1149	-.1673			4.48	8.49	-.0290	5.07	7.77
24	.27	7.58	-.4020	-.24	7.87		-.24	7.87	-.0907	-.1174	-.1590			4.89	8.13	-.0330	4.39	7.27
36	.44	9.08	-.4788	-.35	8.78		-.35	8.78	-.0802	-.1131	-.1578			5.06	7.79	-.0322	4.04	7.02
48	.57	10.18	-.5293	-.44	9.56		-.44	9.56	-.0645	-.1081	-.1336			5.33	7.55	-.0211	3.79	6.77
60	.66	10.98	-.5713	-.55	10.23		-.55	10.23	-.0760	-.0986	-.1312			5.47	7.31	-.0188	3.65	6.54
72	.73	11.48	-.5946	-.60	10.86		-.60	10.86	-.0807	-.0941	-.1324			5.56	7.16	-.0216	3.61	6.33

ALTITUDE (KM) - 11

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	11.36	9.56	-.0043	7.40	8.97	620						10.45	7.49					
12	.14	5.60	-.2858	-.14	5.78		-.14	5.78	-.1288	-.0892	-.1347			5.30	9.12	-.0124	5.66	8.44
24	.27	7.90	-.3975	-.32	8.11		-.32	8.11	-.1222	-.0882	-.1557			5.63	8.71	-.0244	5.02	7.89
36	.41	9.57	-.4808	-.44	9.20		-.44	9.20	-.1262	-.0828	-.1700			5.76	8.32	-.0308	4.70	7.59
48	.59	10.82	-.5373	-.54	10.01		-.54	10.01	-.1113	-.0777	-.1536			6.04	8.01	-.0243	4.41	7.32
60	.71	11.71	-.5787	-.67	10.63		-.67	10.63	-.1133	-.0670	-.1477			6.22	7.76	-.0244	4.21	7.11
72	.78	12.17	-.6008	-.76	11.34		-.76	11.34	-.1176	-.0573	-.1385			6.38	7.62	-.0223	4.14	6.87

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

.....
LATITUDE (KM) - 12
.....

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

.....
CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP
.....

DT HR	MEAN XP	S.D. XP	R (X, YP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.15	5.55	-.2810	-.19	5.44	-.2360	-.2360	.1553	-.1006	6.13	9.27	-.0036	5.42	8.65
24	.28	7.92	-.4307	-.33	7.57	-.4222	-.4222	.1663	-.1396	6.22	8.84	-.0145	5.10	8.17
36	.45	9.52	-.4790	-.52	8.78	-.4829	-.4829	.1785	-.1714	6.31	8.45	-.0282	4.94	7.84
48	.65	10.80	-.5435	-.62	9.52	-.5332	-.5332	.1517	-.1624	6.48	8.08	-.0195	4.74	7.59
60	.75	11.60	-.5826	-.76	10.08	-.5645	-.5645	.1420	-.1613	6.56	7.82	-.0178	4.61	7.40
72	.84	12.08	-.6365	-.91	10.82	-.6021	-.6021	.1397	-.1479	6.76	7.67	-.0128	4.50	7.16

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ALTITUDE (KM) - 13
.....

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

.....
CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP
.....

DT HR	MEAN XP	S.D. XP	R (X, YP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.14	5.29	-.2835	-.19	5.11	-.2937	-.2937	.1278	-.0885	6.37	8.76	-.0113	5.37	8.27
24	.29	7.21	-.3325	-.36	6.92	-.4090	-.4090	.1570	-.1273	6.54	8.41	-.0164	5.14	7.85
36	.48	8.68	-.4604	-.51	7.96	-.4695	-.4695	.1861	-.1547	6.61	8.06	-.0229	4.94	7.57
48	.70	9.68	-.5307	-.60	8.68	-.5140	-.5140	.1926	-.1726	6.76	7.74	-.0355	4.74	7.35
60	.79	10.38	-.5712	-.73	9.29	-.5433	-.5433	.1833	-.1654	6.90	7.50	-.0435	4.55	7.16
72	.89	10.79	-.5318	-.85	9.92	-.5801	-.5801	.1638	-.1411	7.10	7.38	-.0307	4.50	6.99

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP				
										GIVEN X	GIVEN Y			
10.59	7.79	.0147		7.68	7.66				620	9.84	7.77			
12	.14	4.77	-.3110	-.15	4.53	-.2980	-.2980	.1397	.0747	-.1273				
24	.26	6.16	-.4008	-.32	6.16	-.4193	-.4193	.2211	.0388	-.1559				
36	.39	7.24	-.4721	-.42	7.31	-.4935	-.4935	.2548	.0085	-.1900				
48	.60	8.01	-.5225	-.52	7.91	-.5299	-.5299	.2420	.0016	-.1915				
60	.71	8.52	-.5593	-.60	8.46	-.5606	-.5606	.2214	-.0056	-.1621				
72	.80	8.91	-.5821	-.71	8.85	-.5870	-.5870	.2062	-.0389	-.1700				
										MEAN XF	S.D. XF	R (XP,YP)	MEAN YP	S.D. YP
										4.68	7.38	-.0129	5.32	7.26
										5.19	7.12	.0000	4.81	6.88
										5.33	6.85	-.0241	4.57	6.58
										5.48	6.62	-.0255	4.38	6.42
										5.55	6.44	-.0334	4.25	6.28
										5.68	6.32	-.0322	4.11	6.14

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X _P	S.D. X _P	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN X _P	S.D. X _P	R (X _P ,Y _P)	MEAN Y _P	S.D. Y _P
7.79	6.40	.0235		6.27	6.05	620	7.41	6.40					
12	.13	4.43	-.3499	-.3244	.0670	.0790			3.29	5.97	-.170	3.98	5.69
24	.23	4.95	-.4808	-.3997	.1574	.0556			3.63	5.90	.0123	3.80	5.50
36	.37	6.10	-.4741	-.4870	.1463	.0335			3.83	5.62	.0047	3.52	5.25
48	.52	6.24	-.4860	-.5255	.1649	.0153			3.97	5.58	-.0066	3.42	5.17
60	.63	6.93	-.5519	-.5678	.1528	-.0055			4.07	5.33	-.0145	3.20	4.96
72	.73	7.10	-.5720	-.5843	.1486	-.0169			4.13	5.29	-.0232	3.12	4.89

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION 192214 - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE 100 - 15

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	X				Y				XP				YP			
	MEAN	S.D.	P	N	MEAN	S.D.	P	N	MEAN	S.D.	P	N	MEAN	S.D.	P	N
12	4.15	5.35	-.0055	620	4.18	4.82		620								
24																
36																
48																
60																
72																

ALTITUDE 100 - 17

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	X				Y				XP				YP			
	MEAN	S.D.	P	N	MEAN	S.D.	P	N	MEAN	S.D.	P	N	MEAN	S.D.	P	N
12	3.4	4.34	-.0931	620	2.92	3.61		620								
24																
36																
48																
60																
72																

ORIGINAL PAGE 18
 OF POOR QUALITY

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	R (X,Y)	MEAN Y	S.D. Y	N
12	.08	3.23	-.4411	-.04	3.17	-.5718	.1109	620
24	.15	3.02	-.4109	-.07	2.62	-.4743	-.0262	
36	.20	3.53	-.4827	-.13	3.30	-.5959	.1415	
48	.28	3.52	-.4859	-.16	3.16	-.5625	.0511	
60	.33	3.73	-.5164	-.20	3.52	-.6299	.1086	
72	.42	3.95	-.5535	-.25	3.47	-.6109	.0238	

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
GIVEN X	-2.68	3.59	.0720	1.69	2.79
GIVEN Y				-2.81	1.82

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	R (X,Y)	MEAN Y	S.D. Y	N
12	.06	3.15	-.4979	-.04	2.85	-.6343	.1104	620
24	.14	2.65	-.4237	-.07	2.53	-.5589	.0996	
36	.19	3.26	-.5193	-.11	2.71	-.5992	.1026	
48	.28	3.10	-.5120	-.15	2.92	-.6436	.0812	
60	.37	3.45	-.5592	-.17	2.83	-.6259	.0861	
72	.43	3.34	-.5460	-.22	3.00	-.6539	.0538	

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
GIVEN X	-5.02	3.18	.0059	1.05	2.25
GIVEN Y				-5.18	1.12

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION: (132214) - VALDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0
 X = U(AT T)
 Y = V(AT T)
 XP = U(AT T + DT) - V(AT T)
 YP = V(AT T + DT) - U(AT T)

ALTITUDE (KM) - 20

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. Y	P (Y, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
	-7.22	2.82	-0.0987	.57	2.15	820						
1	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00
2	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00
3	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00
4	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00
5	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00

ALTITUDE (KM) - 20

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. Y	P (Y, Y)	MEAN Y	S.D. Y	N		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
	-8.50	2.75	-0.120	.35	1.92	820						
1	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00
2	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00
3	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00
4	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00
5	0.00	1.00	1.0000	0.00	0.00	1		0.00	1.00	1.0000	0.00	1.00

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	-10.21	2.87	-0.378	.04	1.90	620				-10.22	.05					
12	.08	2.93	-.4977	-.02	2.60	-.6810	-.6810	.0226	.0621	2.49	-.0771	-5.19	2.49	-.0771	.31	1.39
24	.16	2.75	-.4500	-.02	2.52	-.6600	-.6600	.0147	.0483	2.55	-.0719	-5.35	2.55	-.0719	-.42	1.42
36	.23	3.03	-.5071	-.03	2.69	-.6985	-.6985	.0360	.0804	2.47	-.1021	-5.19	2.47	-.1021	.36	1.36
48	.31	3.02	-.4977	-.05	2.68	-.7003	-.7003	-.0009	.0167	2.49	-.0972	-5.23	2.49	-.0972	.10	1.36
60	.42	3.17	-.5447	-.07	2.63	-.7026	-.7026	-.0312	.0033	2.40	-.0779	-4.97	2.40	-.0779	.16	1.35
72	.51	3.29	-.5580	-.08	2.63	-.7012	-.7012	-.0032	-.0046	2.38	-.0937	-4.99	2.38	-.0937	.02	1.35

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	-11.58	2.89	-.0706	.04	1.84	620				-11.61	.05					
12	.05	2.87	-.4862	-.01	2.71	-.7375	-.7375	-.0497	-.0304	2.52	-.0831	-5.90	2.52	-.0831	.51	1.24
24	.10	2.76	-.4651	-.03	2.40	-.6608	-.6608	.0593	-.0458	2.55	-.1305	-5.90	2.55	-.1305	-.25	1.38
36	.17	2.95	-.5012	-.03	2.59	-.7131	-.7131	-.0712	-.0225	2.50	-.0588	-5.82	2.50	-.0588	.21	1.29
48	.24	3.06	-.5179	-.03	2.58	-.7111	-.7111	-.0395	-.0179	2.47	-.1358	-5.80	2.47	-.1358	-.08	1.30
60	.36	3.06	-.5179	-.05	2.60	-.7166	-.7166	-.0152	.0466	2.43	-.0886	-5.52	2.43	-.0886	-.27	1.29
72	.44	3.15	-.5179	-.05	2.49	-.6814	-.6814	-.0084	.0393	2.42	-.0929	-5.58	2.42	-.0929	-.25	1.35

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDEBERG
MONTH OF RECORD - AUGUST
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	0.4	2.75	-0.523	-0.0	2.92	-0.7281	-0.7281	2.00	620	-12.61	2.90	-0.1701	-12.62	2.99
24	1.1	2.66	-0.457	-0.2	2.80	-0.6469	-0.6469	2.00	620					
36	1.8	2.91	-0.420	-0.3	2.82	-0.7062	-0.7062	2.00	620					
48	2.7	2.96	-0.4931	-0.1	2.74	-0.6329	-0.6329	2.00	620					
60	3.7	3.05	-0.5127	-0.3	2.85	-0.7211	-0.7211	2.00	620					
72	4.7	3.09	-0.5087	-0.3	2.74	-0.6959	-0.6959	2.00	620					

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	P (X, XP)	MEAN YP	S.D. YP	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	0.7	2.76	-0.566	0.0	2.71	-0.6737	-0.6737	2.00	620	-13.81	2.92	-0.1474	-13.80	2.04
24	1.5	2.66	-0.492	-0.2	2.82	-0.6509	-0.6509	2.00	620					
36	2.3	2.87	-0.453	-0.4	2.80	-0.6926	-0.6926	2.00	620					
48	3.3	2.95	-0.4730	-0.3	2.74	-0.6811	-0.6811	2.00	620					
60	4.5	2.97	-0.4785	-0.5	2.78	-0.6921	-0.6921	2.00	620					
72	5.8	3.02	-0.4888	-0.6	2.77	-0.6931	-0.6931	2.00	620					

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - AUGUST
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	-14.57	2.99	-0.0862	-0.06	1.95	620	-14.39	-0.03

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.07	2.73	-.4439	-.00	2.70	-.6938	-.0014	-.0058	2.67	-.1248	-.09	1.40
24	.13	2.71	-.4427	.00	2.52	-.6485	-.0284	.0442	2.68	-.0986	.18	1.48
36	.21	2.82	-.4562	-.00	2.79	-.7076	-.0243	.0436	2.65	-.1058	.20	1.37
48	.31	3.04	-.4906	-.03	2.67	-.6776	-.0349	.0588	2.60	-.0985	.26	1.43
60	.41	3.00	-.4802	-.05	2.74	-.6977	-.0028	.0312	2.62	-.1109	.03	1.39
72	.49	3.11	-.4919	-.06	2.71	-.6930	-.0254	.0587	2.60	-.0878	.10	1.40

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	-15.14	3.18	-.0372	-.02	2.07	620	-15.00	-.10

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.08	2.95	-.4579	-.00	2.73	-.6569	-.0062	-.0132	2.83	-.0484	.21	1.54
24	.16	2.95	-.4530	.02	2.70	-.6656	-.0718	.0576	2.83	-.0154	.31	1.54
36	.24	3.07	-.4730	.02	2.89	-.7131	-.0119	.0228	2.80	-.0477	.22	1.45
48	.32	3.17	-.4870	-.01	2.79	-.6916	-.0564	.0626	2.78	-.0076	.25	1.49
60	.40	3.29	-.5059	-.01	2.87	-.7113	-.0360	.0143	2.74	-.0691	.31	1.45
72	.51	3.37	-.5194	-.00	2.90	-.7175	-.0218	.0186	2.72	-.0396	.02	1.44

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT. KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
8	1/65 - 12/74	0	90.0	2.00	2.07	-.5630	-1.51	1.85	620
8	1/65 - 12/74	1	90.0	.46	2.62	-.2910	-2.02	3.99	620
8	1/65 - 12/74	2	90.0	.02	3.15	-.2870	-.34	4.19	620
8	1/65 - 12/74	3	90.0	1.15	3.87	-.2645	1.23	4.30	620
8	1/65 - 12/74	4	90.0	1.77	4.55	-.1722	2.16	4.34	620
8	1/65 - 12/74	5	90.0	2.50	5.41	-.1032	2.47	4.76	620
8	1/65 - 12/74	6	90.0	3.71	6.19	-.0499	2.80	5.56	620
8	1/65 - 12/74	7	90.0	5.07	6.60	.0147	3.34	6.43	620
8	1/65 - 12/74	8	90.0	6.62	7.42	.0032	3.93	7.27	620
8	1/65 - 12/74	9	90.0	8.28	8.23	-.0535	4.55	7.89	620
8	1/65 - 12/74	10	90.0	9.88	8.96	-.0142	6.16	8.36	620
8	1/65 - 12/74	11	90.0	11.36	9.56	-.0043	7.40	8.97	620
8	1/65 - 12/74	12	90.0	12.27	9.58	-.0067	8.32	9.09	620
8	1/65 - 12/74	13	90.0	12.07	9.16	.0147	8.38	8.67	620
8	1/65 - 12/74	14	90.0	10.59	7.79	.0235	7.68	7.66	620
8	1/65 - 12/74	15	90.0	7.79	6.40	-.0055	6.27	6.05	620
8	1/65 - 12/74	16	90.0	4.15	5.35	-.0331	4.42	4.62	620
8	1/65 - 12/74	17	90.0	.34	4.34	.0720	2.32	3.61	620
8	1/65 - 12/74	18	90.0	-2.63	3.59	.0059	1.59	2.79	620
8	1/65 - 12/74	19	90.0	-5.02	3.12	-.0537	1.05	2.25	620
8	1/65 - 12/74	20	90.0	-7.02	2.82	-.0120	.57	2.15	620
8	1/65 - 12/74	21	90.0	-8.50	2.76	-.0373	.36	1.93	620
8	1/65 - 12/74	22	90.0	-10.21	2.87	-.0706	.04	1.80	620
8	1/65 - 12/74	23	90.0	-11.58	2.89	-.1701	.08	1.84	620
8	1/65 - 12/74	24	90.0	-12.61	2.90	-.1474	.00	2.00	620
8	1/65 - 12/74	25	90.0	-13.81	2.92	-.0852	.00	2.00	620
8	1/65 - 12/74	26	90.0	-14.57	2.93	-.0372	-.05	1.95	620
8	1/65 - 12/74	27	90.0	-15.14	3.18		-.02	2.07	620

ALTIMETER (KM) - 0

BI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
1.71	2.9	-.5912	-1.45	2.17	600

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (YP,X)	•	•	•	•	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12		-.01	3.87	-.8780	-.00	3.22	-.7303	-.6984	.5067	.6177	•	•	•	.85	1.05	-.4375	-.78	1.48
24		-.03	3.73	-.8737	.00	2.31	-.5094	-.2834	.1622	.0768	•	•	•	.91	2.03	-.6836	-.75	1.86
36		-.03	3.92	-.8849	.00	3.38	-.7603	-.6974	.5412	.6072	•	•	•	.85	1.02	-.3958	-.77	1.41
48		-.05	1.90	-.4090	.00	2.53	.5585	-.4128	.1458	.1459	•	•	•	.89	2.00	-.6654	-.76	1.80
60		-.04	3.95	-.8894	.00	3.48	-.7831	-.6912	.5565	.6001	•	•	•	.85	1.00	-.3786	-.76	1.35
72		-.05	2.02	-.4326	.00	2.71	-.5987	-.4183	.2718	.1588	•	•	•	.89	1.98	-.6745	-.75	1.73

ALTIITUDE (KM) - 1

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

MEAN \bar{X}	S.D. S_x	\bar{r} (X, Y)	MEAN \bar{Y}	S.D. S_y	N
2.90	2.90	-.3465	-1.54	4.35	600

DT	MEAN	S.D.	R	MEAN	S.D.	R	R	R	R	MEAN	S.D.	R	MEAN	S.D.
HR	X _P	X _P	(X, X _P)	Y _P	Y _P	(Y, Y _P)	(X _P , Y _P)	(X _P , Y)	(Y _P , X)	X _P	X _P	(X _P , Y _P)	Y _P	Y _P
12	-01	3.50	-.6731	-.02	3.74	-.4257	-.0093	.0756	-.1036	-.01	2.29	-.4901	-.03	3.92
16	-.02	3.45	-.5913	-.02	4.67	-.5232	-.2794	.2547	-.0460	-.01	2.31	-.3808	-1.00	3.88
24	-.02	4.21	-.7205	-.05	5.55	-.6271	-.2020	.2894	-.0289	-.04	1.93	-.4774	-.98	3.36
48	-.02	3.67	-.6611	-.05	5.87	-.6665	-.3544	.3351	.1435	-.05	2.16	-.3347	-1.01	3.21
72	-.01	4.33	-.7400	-.07	6.27	-.7145	-.3071	.2794	.1732	-.08	1.94	-.3339	-.95	2.03
72	-.00	4.07	-.6599	-.08	6.34	-.7264	-.3878	.3104	.2579	-.10	2.08	-.2864	-.95	2.99

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (1922/4) - VANDENBERG
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XF AND YP

	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	-1.48	4.06	-0.3308	-1.15	5.04	600					-1.58	.04
	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (X,Y)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP
12	-0.02	3.37	-0.101	-0.02	3.84	-0.373	-0.1342	-0.1342	1.995	-0.1186	-0.20	3.63
24	-0.05	4.34	-0.228	-0.05	5.08	-0.4973	-0.2412	-0.2412	2.740	-0.0508	-0.21	3.37
36	-0.07	5.08	-0.414	-0.05	6.02	-0.5845	-0.2985	-0.2985	3.127	-0.0282	-0.22	3.15
48	-0.10	5.53	-0.664	-0.07	6.51	-0.6323	-0.3513	-0.3513	3.410	-0.1014	-0.24	2.99
60	-0.12	5.94	-0.7120	-0.10	6.95	-0.6788	-0.4050	-0.4050	3.382	-0.1625	-0.24	2.82
72	-0.09	5.00	-0.7230	-0.15	7.14	-0.6391	-0.3801	-0.3801	3.250	-0.2148	-0.24	2.76
	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (X,Y)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP
12	-0.02	3.37	-0.101	-0.02	3.84	-0.373	-0.1342	-0.1342	1.995	-0.1186	-0.20	3.63
24	-0.05	4.34	-0.228	-0.05	5.08	-0.4973	-0.2412	-0.2412	2.740	-0.0508	-0.21	3.37
36	-0.07	5.08	-0.414	-0.05	6.02	-0.5845	-0.2985	-0.2985	3.127	-0.0282	-0.22	3.15
48	-0.10	5.53	-0.664	-0.07	6.51	-0.6323	-0.3513	-0.3513	3.410	-0.1014	-0.24	2.99
60	-0.12	5.94	-0.7120	-0.10	6.95	-0.6788	-0.4050	-0.4050	3.382	-0.1625	-0.24	2.82
72	-0.09	5.00	-0.7230	-0.15	7.14	-0.6391	-0.3801	-0.3801	3.250	-0.2148	-0.24	2.76

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XF AND YP

	MEAN X	S.D. X	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y
12	1.14	5.39	-0.2310	.30	5.60	600					1.18	.60
	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (X,Y)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP
12	-0.05	3.93	-0.3445	-0.04	3.81	-0.3223	-0.1098	-0.1098	2.208	-0.1740	.33	4.33
24	-0.09	5.27	-0.4545	-0.05	5.29	-0.4463	-0.2120	-0.2120	2.934	-0.1149	.30	4.53
36	-0.11	6.19	-0.5397	-0.04	6.23	-0.5328	-0.2776	-0.2776	3.200	-0.0401	.24	4.41
48	-0.12	6.88	-0.5938	-0.08	7.05	-0.5363	-0.2919	-0.2919	3.337	-0.0311	.20	4.20
60	-0.13	7.48	-0.6540	-0.16	7.37	-0.6231	-0.2842	-0.2842	3.005	-0.0497	.01	4.01
72	-0.15	7.85	-0.6967	-0.25	7.63	-0.6446	-0.2787	-0.2787	2.583	-0.1067	.09	3.83
	MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	P (Y,YP)	R (X,Y)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP
12	-0.05	3.93	-0.3445	-0.04	3.81	-0.3223	-0.1098	-0.1098	2.208	-0.1740	.33	4.33
24	-0.09	5.27	-0.4545	-0.05	5.29	-0.4463	-0.2120	-0.2120	2.934	-0.1149	.30	4.53
36	-0.11	6.19	-0.5397	-0.04	6.23	-0.5328	-0.2776	-0.2776	3.200	-0.0401	.24	4.41
48	-0.12	6.88	-0.5938	-0.08	7.05	-0.5363	-0.2919	-0.2919	3.337	-0.0311	.20	4.20
60	-0.13	7.48	-0.6540	-0.16	7.37	-0.6231	-0.2842	-0.2842	3.005	-0.0497	.01	4.01
72	-0.15	7.85	-0.6967	-0.25	7.63	-0.6446	-0.2787	-0.2787	2.583	-0.1067	.09	3.83

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	2.43	6.54	-.1256	.45	6.37	600	-.03	4.35	-.0076	.2277	-.2400	.86	6.34	-.1559	.99	5.86
24							-.03	6.07	-.1236	.2963	-.2011	.82	5.70	-.1393	.80	5.50
36							-.03	7.19	-.1921	.3015	-.1205	.86	5.41	-.1139	.57	5.25
48							-.07	8.01	-.2061	.2854	-.0684	.92	5.23	-.1032	.42	5.05
60							-.14	8.45	-.1952	.2478	-.0261	.98	5.03	-.0985	.27	4.94
72							-.25	8.74	-.1807	.2144	.0053	1.03	4.91	-.0956	.15	4.89

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
2.65	.85

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	3.66	7.45	-.0982	.10	7.14	600	-.01	4.79	-.0321	.2293	-.2063	1.53	6.95	-.1145	1.23	6.60
24							.02	6.84	-.1455	.2795	-.1437	1.46	6.59	-.0868	.83	6.19
36							.03	8.06	-.2072	.2839	-.0689	1.50	6.28	-.0575	.52	5.91
48							.03	8.83	-.2267	.2826	-.0251	1.54	6.04	-.0349	.39	5.70
60							-.07	9.39	-.2049	.2579	-.0037	1.59	5.85	-.0288	.23	5.53
72							-.19	9.68	-.1820	.2136	.0214	1.64	5.71	-.0350	.05	5.47

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
4.02	.56

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (192214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN XP (YP,X)	R (XP,Y)	MEAN YP (XP,X)	S.D. YP (XP,X)
12	4.81	8.37	-0.090	-0.27	8.17	600	-0.03	5.37	-0.0377	-0.03	5.37	-0.0377	-0.0377	-0.0377	-0.0377
24							0.07	7.46	-0.0229	0.07	7.46	-0.0229	-0.0229	-0.0229	-0.0229
36							0.09	8.85	-0.0555	0.09	8.85	-0.0555	-0.0555	-0.0555	-0.0555
48							0.08	9.81	-0.0637	0.08	9.81	-0.0637	-0.0637	-0.0637	-0.0637
60							0.04	10.53	-0.0211	0.04	10.53	-0.0211	-0.0211	-0.0211	-0.0211
72							-0.15	10.83	-0.0211	-0.15	10.83	-0.0211	-0.0211	-0.0211	-0.0211

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ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN XP (YP,X)	R (XP,Y)	MEAN YP (XP,X)	S.D. YP (XP,X)
12	5.14	9.40	0.0570	-0.14	9.12	600	0.00	6.16	0.0209	-0.01	6.16	0.0209	0.0209	0.0209	0.0209
24							0.09	8.41	-0.0266	0.09	8.41	-0.0266	-0.0266	-0.0266	-0.0266
36							0.14	9.71	-0.0827	0.14	9.71	-0.0827	-0.0827	-0.0827	-0.0827
48							0.12	10.80	-0.1030	0.12	10.80	-0.1030	-0.1030	-0.1030	-0.1030
60							-0.01	11.57	-0.0304	-0.01	11.57	-0.0304	-0.0304	-0.0304	-0.0304
72							-0.18	11.92	-0.0322	-0.18	11.92	-0.0322	-0.0322	-0.0322	-0.0322

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (53214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	.01	6.41	-.2832	.03	7.28	-.3341	-.3341	.1147	1087	8.41	.53	3.93	9.94	.1883	1.64	9.61
24	36	.02	9.39	-.4260	.14	9.77	-.4311	-.4311	.0673	1107			3.75	9.37	.1955	.99	9.20
36	48	-.04	11.35	-.5220	.23	11.24	-.4950	-.4950	.0204	1115			3.63	8.83	.2249	.61	8.88
48	60	-.11	12.72	-.5864	.18	12.36	-.5475	-.5475	.0028	.0999			3.58	8.40	.2496	.41	8.57
60	72	-.15	13.73	-.6301	.08	13.03	-.5802	-.5802	-.0043	.0880			3.57	8.07	.2748	.22	8.36
72		-.18	14.28	-.6540	-.09	13.54	-.6081	-.6081	.0092	.0501			3.58	7.89	.2777	-.07	8.17

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	24	-.04	7.21	-.2864	.02	7.89	-.3258	-.3258	.1637	.0845	10.26	.89	4.75	11.09	.2643	2.14	10.70
24	36	-.08	10.60	-.4334	.11	10.67	-.4258	-.4258	.1451	.0722			4.51	10.43	.2921	1.42	10.24
36	48	-.15	12.66	-.5245	.20	12.25	-.4849	-.4849	.1178	.0512			4.36	9.87	.3150	.98	9.93
48	60	-.22	14.17	-.5900	.11	13.55	-.5417	-.5417	.1045	.0371			4.28	9.37	.3399	.70	9.56
60	72	-.29	15.40	-.6339	-.03	14.35	-.5736	-.5736	.1205	.0156			4.30	8.99	.3550	.51	9.33
72		-.36	15.95	-.6557	-.20	14.89	-.5593	-.5593	.1340	-.0158			4.27	8.79	.3574	.26	9.13

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
		11.37	12.82	.3247	.69	12.25	600						12.35	1.32
		MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)					
12		-.06	7.99	-.2677	-.02	8.07	-.3104	.1701	-.1353		5.76	12.23	.3460	2.12
24		-.12	11.53	-.4329	.05	11.18	-.4132	.1974	-.1750		5.52	11.51	.3560	1.58
36		-.22	13.86	-.5229	.12	12.82	-.4793	.1865	-.1824		5.38	10.87	.3826	1.16
48		-.33	15.54	-.5857	-.01	14.21	-.5349	.1913	-.1863		5.26	10.31	.3982	.85
60		-.41	16.78	-.6322	-.21	15.21	-.5744	.2070	-.1972		5.28	9.92	.4086	.69
72		-.51	17.52	-.6575	-.44	15.76	-.5987	.2196	-.1834		5.21	9.65	.4147	.36

ALTITUDE (KM) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
		13.63	13.57	.3833	1.29	12.86	600						14.71	1.90
		MEAN XP	S.D. XP	P (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)					
12		-.03	7.78	-.2610	-.02	8.12	-.2979	.1919	-.1265		7.06	13.05	.4011	2.53
24		-.08	11.67	-.4333	.04	11.58	-.4187	.2587	-.1888		6.79	12.33	.4134	1.96
36		-.18	14.27	-.5372	.06	13.42	-.4886	.2554	-.2123		6.60	11.64	.4261	1.52
48		-.30	16.00	-.5717	-.07	14.81	-.5406	.2495	-.2132		6.46	11.03	.4460	1.21
60		-.39	17.23	-.6134	-.25	15.88	-.5820	.2570	-.2232		6.42	10.69	.4571	1.03
72		-.45	17.95	-.6363	-.49	16.57	-.6125	.2589	-.2112		6.37	10.43	.4658	.66

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANCOUVER
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	-02	7.33	-02600	.02	7.31	-02767	-02767	.2040	.0084	-0.1140	7.80	12.80	7.80	12.80	.3860	2.63	11.87	
24	-04	10.96	-03953	.07	10.73	-04041	-04041	.2474	-0.0320	-0.1593	7.69	12.17	7.69	12.17	.3990	2.13	11.29	
36	-15	13.34	-04851	.07	12.71	-04842	-04842	.2528	-0.0479	-0.1939	7.57	11.57	7.57	11.57	.4121	1.99	10.79	
48	-25	14.85	-05405	-011	14.03	-05389	-05389	.2590	-0.0685	-0.2086	7.50	11.14	7.50	11.14	.4233	1.74	10.39	
60	-30	16.04	-05792	-030	15.09	-05803	-05803	.2575	-0.0811	-0.2121	7.51	10.79	7.51	10.79	.4356	1.53	10.04	
72	-34	16.86	-06095	-052	15.69	-06063	-06063	.2597	-0.1052	-0.2028	7.55	10.51	7.55	10.51	.4425	1.12	9.83	

ALTITUDE (KM) - 13

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN X	S.D. X	R (X, Y)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	-01	6.86	-02584	.05	6.33	-02680	-02680	.1955	.0299	-0.1311	8.06	11.84	8.06	11.84	.3558	3.45	10.01	
24	-01	9.60	-03749	.08	9.12	-03857	-03857	.2350	-0.0035	-0.1732	8.00	11.35	8.00	11.35	.3637	2.85	10.34	
36	-09	11.67	-04544	.08	11.02	-04728	-04728	.2541	-0.0134	-0.2211	8.03	10.67	8.03	10.67	.3690	2.87	9.85	
48	-19	12.99	-05031	-009	12.37	-05343	-05343	.2602	-0.0314	-0.2380	8.01	10.54	8.01	10.54	.3732	2.61	9.44	
60	-24	14.05	-05438	-027	13.51	-05836	-05836	.2513	-0.0484	-0.2331	7.95	10.25	7.95	10.25	.3859	2.26	9.07	
72	-30	14.34	-05776	-047	14.17	-06146	-06146	.2436	-0.0760	-0.2147	7.88	9.99	7.88	9.99	.3972	1.74	8.84	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/65 - 12.74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.02	5.40	-.2538	.02	5.17	.2902	2.24	9.51	600	7.71	9.63	.2988	3.95	9.13
27	.03	7.57	-.1374	.05	7.43					7.64	9.31	.3145	3.25	8.77
35	.03	9.03	-.1167	.03	9.15					7.76	9.01	.3133	3.04	8.35
48	.00	10.26	-.1542	.07	10.42					7.70	8.72	.3211	2.68	8.00
59	-.02	11.30	-.1735	-.21	11.40					7.67	8.47	.3298	2.11	7.73
72	-.03	12.15	-.1520	-.35	11.83					7.64	8.25	.3458	1.47	7.58

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.02	9.22	.2518	1.59	7.21				600	7.71	9.63	.2988	3.95	9.13
27	.03	7.77	.2075	1.25	7.15					7.64	9.31	.3145	3.25	8.77
35	.03	9.27	.1874	1.40	7.40					7.76	9.01	.3133	3.04	8.35
48	.00	10.26	.1542	1.07	10.42					7.70	8.72	.3211	2.68	8.00
59	-.02	11.30	.1735	-.21	11.40					7.67	8.47	.3298	2.11	7.73
72	-.03	12.15	.1520	-.35	11.83					7.64	8.25	.3458	1.47	7.58

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (13214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	8.93	7.15	-.2304	1.01	6.02	600								
24														
36														
48														
60														
72														

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	5.19	5.75	.1666	.25	4.61	600								
24														
36														
48														
60														
72														

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CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XF AND YP

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CONDITIONAL B: VARIATE NORMAL STATISTICS
FOR XP AND YP

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
		-1.68	3.92	.0757	-.49	2.37	600												
12		.07	3.10	-.3337	-.01	2.60		-.01	2.60	-.0335	-.5361	2.60	-.01		.0398	-.85	3.60	.1120	2.00
24		.15	3.05	-.3903	-.04	2.83		-.04	2.83	-.0155	-.5711	2.83	-.04		-.0733	-.74	3.60	.1159	1.92
36		.25	3.47	-.4352	-.06	2.87		-.06	2.87	.0177	-.5749	2.87	-.06		-.0095	-.75	3.53	.1015	1.94
48		.34	3.80	-.4834	-.06	3.25		-.06	3.25	.0026	-.6534	3.25	-.06		-.0100	-.73	3.43	.1194	1.80
60		.33	4.11	-.5075	-.04	3.34		-.04	3.34	.0321	-.6672	3.34	-.04		-.0281	-.69	3.38	.1005	1.77
72		.42	4.09	-.5038	-.03	3.44		-.03	3.44	-.0018	-.6810	3.44	-.03		.0245	-.70	3.39	.1144	1.73

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X
 -1.63
 -1.42

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
		-2.86	3.84	.0791	-.37	2.33	600												
12		.10	2.96	-.3780	-.02	2.75		-.02	2.75	-.0347	-.5911	2.75	-.02		.0393	-.41	3.55	.1104	1.87
24		.18	3.07	-.3961	-.02	2.83		-.02	2.83	.0407	-.5948	2.83	-.02		-.0580	-.32	3.52	.0983	1.87
36		.29	3.35	-.4338	-.05	3.01		-.05	3.01	.0300	-.6302	3.01	-.05		-.0331	-.30	3.45	.1075	1.80
48		.36	3.65	-.4643	-.07	3.32		-.07	3.32	.0731	-.6924	3.32	-.07		-.0070	-.27	3.40	.0955	1.68
60		.45	3.84	-.4825	-.04	3.35		-.04	3.35	.0844	-.6977	3.35	-.04		-.0241	-.24	3.35	.0738	1.67
72		.51	4.12	-.5227	-.02	3.40		-.02	3.40	.1463	-.7028	3.40	-.02		.0444	-.20	3.27	.0308	1.65

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X
 -2.89
 -1.38

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QUACRARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION 193211 - VANDENBERG
MONTH OF RECORD - SEPTEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUACRARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
-3.31	3.58	.1505	-1.2	2.11	600			-4.35	-1.50						
DT	MEAN XP	S.D. YP	P (X, YP)	MEAN YP	S.D. XP	P (Y, YP)	P (XP, Y)	P (XP, YP)							
12	1.12	2.74	.3558	-1.01	2.53	-.8075	-.1129	.2076			-.134	3.22	.2076	.05	1.61
24	.23	2.47	.3777	-.02	2.43	-.5715	-.0498	.1881			-.130	3.31	.1881	-.23	1.73
36	.33	2.59	.3755	-.01	2.41	-.5728	-.1823	.1878			-.132	3.25	.1878	.09	1.61
48	.42	2.43	.4047	.01	2.35	-.5833	-.1881	.1539			-.133	3.18	.1539	-.03	1.52
60	.52	2.53	.4356	.01	2.33	-.5885	-.1430	.1516			-.132	3.17	.1516	-.09	1.53
72	.56	2.82	.4505	.01	2.34	-.5973	-.2102	.1463			-.174	3.11	.1463	.04	1.50

ALTITUDE (KM) - 23

QUACRARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y		MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
-2.84	3.93	.1501	-1.34	2.12	600			-4.99	-1.32						
DT	MEAN XP	S.D. YP	P (X, YP)	MEAN YP	S.D. XP	P (Y, YP)	P (XP, Y)	P (XP, YP)							
12	1.05	2.91	.3660	-.01	2.68	-.8223	-.1119	.1813			-.274	2.95	.1813	.22	1.64
24	.25	2.55	.3770	.01	2.58	-.5711	-.1129	.1582			-.274	2.95	.1582	-.15	1.68
36	.33	2.66	.3799	-.02	2.63	-.5618	-.1931	.1571			-.275	2.95	.1571	.05	1.59
48	.42	2.47	.4022	.01	2.54	-.5713	-.1688	.1463			-.278	2.93	.1463	.13	1.55
60	.52	2.57	.4343	.01	2.57	-.5743	-.2572	.1397			-.274	2.91	.1397	.13	1.49
72	.56	2.87	.4505	.01	2.52	-.5916	-.2655	.1334			-.274	2.91	.1334	.13	1.52

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-5.58	4.05	.0151	-2.22	2.17	600													
12	.14	2.73	-.3326	-.01	2.74		-.01	2.74	-.01	-.0201	-.0831	-.6206	-.0201	.0592	-2.59	3.81	.0692	.34	1.69
24	.31	2.90	-.3399	.02	2.78		.02	2.78	.02	-.0178	-.0201	-.6274	-.0201	.0005	-2.72	3.81	.0579	-.05	1.69
36	.48	3.14	-.3522	.02	2.91		.02	2.91	.02	.0173	-.1057	-.6555	.0173	.0567	-2.77	3.77	.0693	.31	1.63
48	.61	3.46	-.3735	.03	3.13		.03	3.13	.03	.1087	-.1806	-.7042	.1087	.0227	-2.73	3.74	.0323	.32	1.53
60	.77	3.65	-.3926	.03	3.25		.03	3.25	.03	.1720	-.1171	-.7201	.1720	.0068	-2.76	3.72	.0384	.17	1.50
72	.91	3.88	-.4113	.03	3.23		.03	3.23	.03	.1512	-.1827	-.7051	.1512	-.0268	-2.71	3.69	-.0085	.20	1.53

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	R (XP, YP)	R (XP, X)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	-6.07	4.24	.0983	-.11	2.19	600													
12	.15	2.84	-.2977	-.02	2.84		-.02	2.84	-.02	.0258	-.1303	-.6026	.0258	.0415	-3.02	4.04	.1184	.54	1.73
24	.31	2.90	-.3199	-.02	2.79		.02	2.79	.02	.0834	-.1024	-.6382	.0834	.0306	-3.02	4.02	.0853	.19	1.68
36	.48	3.05	-.3185	-.01	3.02		.01	3.02	.01	.1195	-.2233	-.6855	.1195	.0017	-3.09	4.02	.0795	.63	1.56
48	.64	3.47	-.3589	-.01	3.15		.01	3.15	.01	.1619	-.2364	-.7152	.1619	.0306	-3.03	3.96	.0507	.48	1.50
60	.79	3.77	-.3725	.01	3.26		.01	3.26	.01	.2049	-.2547	-.7354	.2049	-.0619	-3.11	3.93	.0220	.39	1.46
72	.94	4.03	-.3921	.01	3.24		.01	3.24	.01	.1960	-.2206	-.7311	.1960	-.0692	-3.10	3.90	.0286	.26	1.48

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93614) - VANDENBERG
 MONTH OF RECORD - SEPTEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	CONDITONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	1.15	2.73	-.2897	-.03	2.67	-.6071	-.03	2.18	600	GIVEN X -6.68
24	.74	2.86	-.3028	-.03	2.65	-.6501	-.03	2.18	600	GIVEN Y .05
36	.52	3.16	-.3175	-.02	2.93	-.6665	-.02	2.18	600	
48	.69	3.53	-.3523	.00	3.12	-.7069	.00	2.18	600	
60	.87	3.89	-.3557	.03	3.22	-.7237	.03	2.18	600	
72	1.03	4.08	-.3775	.04	3.23	-.7211	.04	2.18	600	

ALTITUDE (KM) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	CONDITONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP
12	1.15	2.93	-.2834	-.02	2.65	-.6278	-.02	2.10	600	GIVEN X -6.95
24	.75	2.97	-.2821	-.04	2.79	-.6556	-.04	2.10	600	GIVEN Y .03
36	.52	3.25	-.3174	-.03	2.95	-.6950	-.03	2.10	600	
48	.71	3.63	-.3355	-.04	3.14	-.7281	-.04	2.10	600	
60	.89	4.00	-.3507	-.03	3.14	-.7309	-.03	2.10	600	
72	1.08	4.15	-.3547	-.03	3.16	-.7334	-.03	2.10	600	

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDEBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
9	1/65 - 12/74	0	90.0	1.71	2.19	-.5912	-1.45	2.17	600
9	1/65 - 12/74	1	90.0	-.32	2.90	-.3485	-1.54	4.35	600
9	1/65 - 12/74	2	90.0	-.48	4.06	-.3308	-.25	5.04	600
9	1/65 - 12/74	3	90.0	1.14	5.39	-.2310	.30	5.60	600
9	1/65 - 12/74	4	90.0	2.43	6.54	-.1256	.45	6.37	600
9	1/65 - 12/74	5	90.0	3.66	7.45	-.0982	.10	7.14	600
9	1/65 - 12/74	6	90.0	4.81	8.37	-.0190	-.25	8.17	600
9	1/65 - 12/74	7	90.0	6.14	9.40	.0670	-.14	9.12	600
9	1/65 - 12/74	8	90.0	7.71	10.45	.1619	-.13	10.32	600
9	1/65 - 12/74	9	90.0	9.35	11.66	.2510	.27	11.45	600
9	1/65 - 12/74	10	90.0	11.37	12.82	.3247	.69	12.25	600
9	1/65 - 12/74	11	90.0	13.63	13.57	.3833	1.29	12.86	600
9	1/65 - 12/74	12	90.0	15.50	13.28	.3721	2.03	12.38	600
9	1/65 - 12/74	13	90.0	16.15	12.30	.3442	2.50	11.26	600
9	1/65 - 12/74	14	90.0	15.02	10.01	.2902	2.24	9.51	600
9	1/65 - 12/74	15	90.0	12.28	8.22	.2518	1.59	7.81	600
9	1/65 - 12/74	16	90.0	8.93	7.15	.2304	1.01	6.02	600
9	1/65 - 12/74	17	90.0	5.19	5.75	.1666	.25	4.61	600
9	1/65 - 12/74	18	90.0	2.04	4.88	.1132	-.23	3.47	600
9	1/65 - 12/74	19	90.0	-.11	4.23	.1320	-.41	2.82	600
9	1/65 - 12/74	20	90.0	-1.68	3.92	.0757	-.49	2.37	600
9	1/65 - 12/74	21	90.0	-2.86	3.84	.0791	-.37	2.33	600
9	1/65 - 12/74	22	90.0	-3.91	3.58	.1565	-.48	2.11	600
9	1/65 - 12/74	23	90.0	-4.84	3.93	.1601	-.34	2.12	600
9	1/65 - 12/74	24	90.0	-5.58	4.05	.0451	-.22	2.17	600
9	1/65 - 12/74	25	90.0	-6.07	4.24	.0983	-.11	2.19	600
9	1/65 - 12/74	26	90.0	-6.56	4.65	.1020	-.05	2.18	600
9	1/65 - 12/74	27	90.0	-6.82	4.94	.0696	-.03	2.10	600

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDERBERG
MONTH OF RECORD - OCTOBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	1.33	2.53	-0.5614	-1.25	2.64	620	.66	1.39	-0.5355	-.63	2.04
24							.66	2.31	-.6114	-.60	2.27
36							.66	1.30	-.4932	-.63	1.83
48							.65	2.25	-.6028	-.57	2.05
60							.66	1.27	-.4611	-.63	1.76
72							.66	2.24	-.6111	-.56	2.03

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.07	2.98	-.0923	-1.94	5.27	620	.25	2.39	-.0864	-.88	4.73
24							.21	2.30	-.0964	-.85	4.33
36							.16	2.14	-.1007	-.84	4.11
48							.11	2.25	-.1260	-.84	3.96
60							.06	2.17	-.1212	-.82	3.86
72							.05	2.29	-.1113	-.81	3.84

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	.54	4.49	-0.2667	-1.64	6.21	620								.76	-2.07		
12	.04	3.59	-.4031	-.03	4.57	.1979	-.3673	-.1064	.1979	-.1270	.50	4.04	-.2992		-.47	5.69	
24	.08	4.71	-.5340	-.03	6.19	.2644	-.4999	-.1906	.2644	-.0741	.44	3.71	-.2959		-.53	5.27	
36	.14	5.45	-.6205	-.04	7.27	.2544	-.5835	-.2236	.2544	-.0146	.36	3.48	-.2657		-.58	4.58	
48	.19	5.79	-.6609	-.08	7.77	.2472	-.6216	-.2489	.2472	.0716	.35	3.34	-.2743		-.63	4.83	
60	.18	6.02	-.6895	-.08	8.07	.2432	-.6474	-.2487	.2432	.0898	.33	3.24	-.2752		-.62	4.70	
72	.20	6.09	-.6978	-.02	8.36	.2715	-.6718	-.2821	.2715	.1205	.33	3.20	-.2417		-.60	4.57	

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
	2.14	6.17	-0.2152	-2.02	7.35	620								2.38	-2.49		
12	.06	4.20	-.3509	-.04	4.66	.2275	-.3137	-.0761	.2275	-.1620	1.57	5.62	-.2367		-.02	6.80	
24	.09	5.77	-.4734	-.08	6.68	.2472	-.4531	-.1155	.2472	-.1500	1.37	5.28	-.2308		-.30	6.38	
36	.14	6.95	-.5778	-.15	8.06	.2166	-.5518	-.1125	.2166	-.0853	1.22	4.95	-.2591		-.51	6.02	
48	.21	7.62	-.6333	-.22	8.74	.1908	-.6000	-.1305	.1908	-.0279	1.18	4.72	-.2623		-.67	5.82	
60	.22	7.95	-.6627	-.19	9.19	.1756	-.6306	-.1383	.1756	.0060	1.14	4.59	-.2646		-.71	5.65	
72	.28	8.34	-.5705	-.09	9.52	.1943	-.6534	-.1635	.1943	.0306	1.16	4.55	-.2441		-.66	5.52	

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDEBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
12	.05	4.95	-.3269	-.05	5.31	-.3142	-.3142	.0106	2395
24	.08	7.03	-.4632	-.14	7.86	-.4634	-.4634	-.0089	.2260
36	.15	8.49	-.5579	-.23	9.38	-.5516	-.5516	-.0025	.1730
48	.24	9.29	-.6156	-.29	10.25	-.6050	-.6050	-.0004	.1321
60	.27	9.73	-.6472	-.24	10.80	-.6356	-.6356	-.0032	.1137
72	.33	9.89	-.6601	-.13	11.27	-.6607	-.6607	-.0274	.1285

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
4.14	-2.90

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.05	4.95	-.3269	-.05	5.31	-.3142	-.3142	.0106	.2395	2.82	7.11	-.1023	.72	8.00
24	.08	7.03	-.4632	-.14	7.86	-.4634	-.4634	-.0089	.2260	2.39	6.70	-.1072	.01	7.48
36	.15	8.49	-.5579	-.23	9.38	-.5516	-.5516	-.0025	.1730	2.21	6.34	-.1159	-.44	7.12
48	.24	9.29	-.6156	-.29	10.25	-.6050	-.6050	-.0004	.1321	2.12	6.07	-.1195	-.69	6.85
60	.27	9.73	-.6472	-.24	10.80	-.6356	-.6356	-.0032	.1137	2.07	5.89	-.1219	-.77	6.66
72	.33	9.89	-.6601	-.13	11.27	-.6607	-.6607	-.0274	.1285	2.09	5.81	-.1064	-.74	6.47

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ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N
12	.06	5.29	-.3078	-.09	6.20	-.3242	-.3242	.1765	.1426
24	.08	7.82	-.4459	-.22	9.06	-.4743	-.4743	.1363	.0962
36	.16	9.43	-.5348	-.30	10.74	-.5598	-.5598	.1351	.0576
48	.21	10.37	-.5920	-.38	11.64	-.6076	-.6076	.1374	.0218
60	.26	10.91	-.6273	-.27	12.21	-.6349	-.6349	.1279	.0184
72	.34	11.23	-.6451	-.16	12.79	-.6617	-.6617	.1123	.0286

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
5.85	-3.03

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.06	5.29	-.3078	-.09	6.20	-.3242	-.3242	.1765	.1426	3.63	8.35	.0417	1.23	9.08
24	.08	7.82	-.4459	-.22	9.06	-.4743	-.4743	.1363	.0962	3.17	7.89	.0370	.04	8.51
36	.16	9.43	-.5348	-.30	10.74	-.5598	-.5598	.1351	.0576	3.07	7.47	.0244	-.42	8.04
48	.21	10.37	-.5920	-.38	11.64	-.6076	-.6076	.1374	.0218	2.97	7.15	.0169	-.70	7.74
60	.26	10.91	-.6273	-.27	12.21	-.6349	-.6349	.1279	.0184	2.95	6.91	.0165	-.72	7.53
72	.34	11.23	-.6451	-.16	12.79	-.6617	-.6617	.1123	.0286	2.97	6.74	.0268	-.68	7.30

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
HR															
12	7.01	10.14	.1045	-2.71	11.23	620						7.18	-3.13		
24															
36															
48															
60															
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X,Y)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
HR															
12	8.49	11.69	.1505	-2.87	12.74	620						8.66	-3.33		
24															
36															
48															
60															
72															

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND Y

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (1932/4) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	9.88	13.01	.2050	7.74	14.36	620										
24																
36																
48																
60																
72																

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	11.35	14.29	.2673	-1.69	15.55	620										
24																
36																
48																
60																
72																

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 10

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
HR														
12	-0.00	10.00	-0.3445	-0.18	11.62	-0.3627	-0.3627	-0.3627	620	6.93	14.08	0.2973	0.12	15.13
24	-0.02	14.16	-0.4782	-0.43	15.99	-0.5049	-0.5049	-0.5049		7.09	13.13	0.2715	-0.10	13.99
36	-0.01	16.49	-0.5587	-0.61	18.54	-0.5872	-0.5872	-0.5872		6.93	12.42	0.2531	-0.45	13.12
48	0.04	17.64	-0.6026	-0.64	20.13	-0.6359	-0.6359	-0.6359		6.79	11.95	0.2489	-0.69	12.52
60	0.12	18.11	-0.6277	-0.57	20.49	-0.6459	-0.6459	-0.6459		6.69	11.86	0.2519	-0.83	12.40
72	0.30	18.39	-0.6393	-0.53	20.77	-0.6499	-0.6499	-0.6499		6.78	11.51	0.2617	-0.83	12.34

ALTITUDE (KM) - 11

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
HR														
12	-0.04	9.63	-0.3313	-0.17	11.38	-0.3540	-0.3540	-0.3540	620	7.46	14.31	0.3209	-0.17	15.18
24	-0.10	13.86	-0.4661	-0.41	15.96	-0.5020	-0.5020	-0.5020		7.74	13.41	0.3022	-0.22	14.02
36	-0.03	16.30	-0.5473	-0.55	17.27	-0.5794	-0.5794	-0.5794		7.71	12.67	0.2917	-0.34	13.25
48	-0.02	17.53	-0.5945	-0.61	19.70	-0.6210	-0.6210	-0.6210		7.62	12.18	0.2855	-0.49	12.70
60	-0.01	18.14	-0.6215	-0.54	20.38	-0.6396	-0.6396	-0.6396		7.53	11.86	0.2839	-0.59	12.46
72	0.12	19.76	-0.6413	-0.52	20.67	-0.6494	-0.6494	-0.6494		7.58	11.61	0.2868	-0.75	12.43

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - OCTOBER
PERIOD OF RECORD - 1/63 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-08	9.93	-3097	-21	10.55	-3410	-3410	3119	-0650	-1342	5.59	.3229	.41	14.49
24	-11	13.36	-4605	-39	15.05	-4974	-4974	3788	-1393	-2293	6.73	.2992	.17	13.36
36	-09	15.69	-5431	-51	17.27	-5715	-5715	3793	-1646	-2636	8.63	.2687	-.03	12.63
48	-06	16.91	-5902	-54	18.65	-6161	-6161	3737	-1771	-2811	8.55	.2822	-.12	12.12
60	-02	17.60	-6218	-45	19.40	-6371	-6371	3631	-1789	-2876	8.44	.2827	-.14	11.86
72	.07	18.18	-6416	-42	19.85	-6467	-6467	3460	-1641	-2726	8.37	.2917	-.41	11.75

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN Y	R	S.D.
-3.35	16.77	15.43

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-08	7.73	-3067	-23	9.12	-3338	-3338	2999	-0532	-1342	8.73	.2934	.70	12.62
24	-06	11.54	-4527	-41	12.86	-4833	-4833	3464	-1129	-2156	8.87	.2739	.34	11.71
36	-06	13.59	-5391	-54	14.93	-5611	-5611	3629	-1480	-2527	8.69	.2602	.12	11.07
48	-01	14.68	-5876	-55	16.18	-6074	-6074	3571	-1617	-2630	8.55	.2583	.01	10.62
60	.06	15.33	-6199	-45	16.92	-6319	-6319	3427	-1606	-2645	8.46	.2645	.01	10.36
72	.16	15.80	-6352	-41	17.46	-6499	-6499	3390	-1677	-2628	8.45	.2673	-.07	10.16

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	R	S.D.
-3.04	16.89	13.41

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
	15.02	11.22	.2697	-1.82	11.68	620								
12	-.05	5.70	-.3098	-.15	7.66	-.3236	-.3236	.2667	.0265	8.67	10.61	.2761	2.88	10.97
24	-.09	9.82	-.4492	-.31	10.79	-.4653	-.4653	.3248	-.0547	8.53	9.96	.2555	1.44	10.27
36	-.10	11.64	-.5347	-.43	12.49	-.5379	-.5379	.3460	-.1050	8.25	9.44	.2438	.77	9.79
48	-.06	12.58	-.5812	-.45	13.58	-.5855	-.5855	.3442	-.1174	8.14	9.09	.2437	.70	9.41
60	-.03	13.25	-.6155	-.37	14.38	-.6189	-.6189	.3114	-.1062	8.06	8.81	.2625	.66	9.11
72	.09	13.85	-.6436	-.38	14.84	-.6356	-.6356	.3214	-.1252	8.01	8.56	.2586	.48	8.96

GIVEN
X
15.15
-2.49

ALTITUDE (KM) - 15

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
	14.38	9.19	.2588	-1.59	9.68	620					

GIVEN
X
14.55
-2.19

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (32214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	11.99	7.65	.1974	-1.49	7.80	620								
24														
36														
48														
60														
72														

GIVEN
X
12.13
-1.93

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	8.97	6.21	.1603	-1.30	5.99	620								
24														
36														
48														
60														
72														

GIVEN
X
9.11
-1.68

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	5.97	5.02	.1535	-1.25	4.53	620	3.49	3.49	.0774	.0993	.1450	3.18	4.58	.1779	.38	4.16	4.16	4.16	4.16	.1779	.38	4.16
24							-.01	3.49	.1307	.1369	-.2264	3.33	4.42	.1756	.70	4.42	4.42	4.42	4.42	.1756	.70	4.42
36							-.08	4.16	.1497	.0853	-.2127	3.26	4.25	.1733	.33	4.25	4.25	4.25	4.25	.1733	.33	4.25
48							-.12	4.86	.1741	.0508	-.2071	3.18	4.13	.1748	.20	4.13	4.13	4.13	4.13	.1748	.20	4.13
60							-.14	5.38	.2032	-.0037	-.2015	3.12	4.00	.1625	.02	4.00	4.00	4.00	4.00	.1625	.02	4.00
72							-.14	5.79	.2452	-.0061	-.2131	3.11	3.91	.1438	-.04	3.91	3.91	3.91	3.91	.1438	-.04	3.91

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN
X
6.06
-1.46

ALTITUDE (KM) - 19

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP
12	3.59	4.44	.2103	-1.33	3.54	620	2.94	2.94	.0743	.0567	.1119	1.91	4.04	.2415	-.26	4.04	4.04	4.04	4.04	.2415	-.26	4.04
24							-.01	3.19	.0961	.1351	-.2082	2.12	3.92	.2496	.02	3.92	3.92	3.92	3.92	.2496	.02	3.92
36							-.03	3.88	.1552	.0422	-.1866	1.99	3.80	.2406	-.22	3.80	3.80	3.80	3.80	.2406	-.22	3.80
48							-.02	4.16	.1864	.0152	-.1960	1.99	3.72	.2394	-.24	3.72	3.72	3.72	3.72	.2394	-.24	3.72
60							-.02	4.42	.2303	-.0541	-.1882	1.94	3.63	.2252	-.36	3.63	3.63	3.63	3.63	.2252	-.36	3.63
72							-.03	4.56	.2328	-.0549	-.1904	1.96	3.58	.2334	-.36	3.58	3.58	3.58	3.58	.2334	-.36	3.58

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN
X
3.70
-1.44

QUADRI-VARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION: 132141 - JACOBBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M): -20

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N
2.2:	4.27	.2332	-1.22	3.42	620	

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN XP	S.D. XP	P (Y, XP)	MEAN YP	S.D. YP	P (XP, YP)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	.04	3.53	-1.185	-.01	3.22	.0453	-1.4522	.0212	1.15	3.22	.2232	-.43	3.02
24	.03	3.71	-1.333	-.02	3.40	.1022	-.4522	.1022	.33	3.22	.2713	-.23	2.93
36	.03	4.13	-1.522	-.03	3.75	.157	-.5448	.157	.23	3.23	.2323	-.43	2.86
48	.03	4.54	-1.722	-.03	4.13	.2123	-.6313	.2123	.24	3.61	.2757	-.49	2.74
60	.03	4.94	-1.927	-.03	4.54	.2613	-.7273	.2613	.13	3.43	.2513	-.57	2.72
72	.03	5.12	-1.936	-.02	4.45	.2432	-.6454	.2432	.23	3.44	.2511	-.57	2.51

ALTITUDE (M): -20

QUADRI-VARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. Y	P (X, Y)	MEAN Y	S.D. Y	N
1.59	4.31	.2035	-1.21	3.14	620	

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

	MEAN XP	S.D. XP	P (Y, XP)	MEAN YP	S.D. YP	P (XP, YP)	MEAN Y	S.D. Y	MEAN XP	S.D. XP	P (XP, YP)	MEAN YP	S.D. YP
12	.01	3.46	-1.244	-.01	3.23	.0255	-.5050	.0255	.73	3.34	.2517	-.53	2.71
24	.03	3.73	-1.436	-.01	3.35	.0281	-.5230	.0281	.23	3.34	.2542	-.43	2.65
36	.03	4.12	-1.622	-.02	3.74	.1213	-.5861	.1213	.23	3.34	.2542	-.54	2.53
48	.03	4.54	-1.822	-.02	4.12	.1842	-.6736	.1842	.23	3.34	.2542	-.54	2.48
60	.03	4.93	-1.927	-.02	4.53	.237	-.7273	.237	.23	3.34	.2542	-.57	2.41
72	.03	5.12	-1.936	-.02	4.43	.2161	-.6732	.2161	.23	3.34	.2542	-.57	2.33

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (XP,Y)	R (XP,XP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.02	3.41	-.3966	-.00	3.05	-.5183	-.0970	-.0640	620	-.0323	-.0323	.69	3.98	.2490	-.49	2.49
24	.05	3.58	-.4135	.00	3.34	-.5625	.1059	.0095		-.0954	-.0954	.80	3.94	.2565	-.39	2.40
36	.08	4.16	-.4737	-.04	3.51	-.5876	.1731	-.0391		-.0831	-.0831	.75	3.81	.2386	-.49	2.36
48	.15	4.60	-.5172	-.04	3.69	-.6157	.1742	-.0852		-.1046	-.1046	.81	3.71	.2441	-.47	2.30
60	.21	4.87	-.5532	-.05	3.89	-.6487	.2429	-.1571		-.1184	-.1184	.79	3.61	.2226	-.50	2.22
72	.24	4.93	-.5535	-.07	4.13	-.6918	.2515	-.1850		-.1146	-.1146	.80	3.61	.2198	-.51	2.10

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	MEAN Y	S.D. Y	N	R (XP,Y)	R (XP,XP)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.06	3.36	-.3862	-.03	3.12	-.5364	-.0407	.0054	620	-.0335	-.0335	.73	4.20	.2033	-.47	2.43
24	.10	3.77	-.4265	-.05	3.23	-.5558	.0010	.0654		-.0413	-.0413	.82	4.11	.2026	-.40	2.39
36	.14	4.25	-.4753	-.05	3.50	-.5964	.0828	-.0343		-.0395	-.0395	.81	4.01	.1843	-.45	2.32
48	.19	4.45	-.4875	-.08	3.79	-.6446	.1432	-.1125		-.0392	-.0392	.82	3.97	.1670	-.49	2.20
60	.27	4.90	-.5412	-.07	3.99	-.6786	.1399	-.1196		-.0272	-.0272	.84	3.82	.1857	-.49	2.12
72	.33	5.04	-.5461	-.05	4.10	-.6962	.1751	-.1717		-.0256	-.0256	.86	3.79	.1689	-.50	2.07

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN X GIVEN Y	S.D. X GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
		1.92	4.98	.1258	-66	2.94	620						1.82	-50					
12		.06	3.47	-.3543	-.00	3.16		-.0133	-.0192	-.0221	1.01	4.65	.1629	.1629	1.01	4.65	-.45	2.47	2.38
24		.13	3.84	-.3893	-.03	3.41		-.0499	-.0159	-.0310	1.09	4.58	.1521	.1521	1.09	4.58	-.37	2.38	2.28
36		.19	4.30	-.4297	-.05	3.68		-.0718	-.0559	-.0209	1.10	4.49	.1540	.1540	1.10	4.49	-.45	2.28	2.15
48		.27	4.61	-.4608	-.05	3.85		-.1493	-.1145	-.0320	1.13	4.42	.1246	.1246	1.13	4.42	-.46	2.22	2.18
60		.37	5.01	-.4979	-.09	4.00		-.1437	-.1270	-.0285	1.16	4.31	.1442	.1442	1.16	4.31	-.49	2.15	2.18
72		.47	5.20	-.5100	-.07	3.95		-.1857	-.1816	-.0246	1.20	4.27	.1246	.1246	1.20	4.27	-.50	2.18	2.18

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP,YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
		2.34	5.48	.0966	-.45	2.89	620						2.20	-.25					
12		.11	3.44	-.3182	.02	2.92		-.1319	-.0344	-.0704	1.28	5.19	.1483		.1483	1.28	5.19	-.37	2.51
24		.22	3.81	-.3572	.03	3.14		-.0187	-.0184	-.0158	1.33	5.12	.1244		.1244	1.33	5.12	-.27	2.45
36		.31	4.30	-.3956	.02	3.49		-.0055	-.0035	-.0180	1.39	5.03	.1407		.1407	1.39	5.03	-.32	2.34
48		.39	4.66	-.4185	.01	3.74		.0320	-.0464	.0235	1.44	4.97	.1428		.1428	1.44	4.97	-.35	2.24
60		.50	4.99	-.4488	-.04	3.91		.1251	-.1521	.0277	1.46	4.87	.1255		.1255	1.46	4.87	-.41	2.16
72		.64	5.27	-.4640	-.04	3.96		.1270	-.1558	.0302	1.55	4.83	.1261		.1261	1.55	4.83	-.41	2.15

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (9214) - VANDENBERG
 MONTH OF RECORD - OCTOBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (MO) - 26

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.15	3.30	-.2824	.01	3.08	-.5113	-.5113	.0356	-.0943	.0101	1.77	5.98	.2139	2.59
24	.27	3.80	-.3211	-.00	3.32	-.5432	-.5432	.0623	.0008	-.0315	1.86	5.90	.2204	2.52
36	.33	4.28	-.3552	-.03	3.59	-.6005	-.6005	.0746	-.0554	-.0105	1.94	5.83	.2289	2.40
48	.49	4.79	-.3880	-.02	3.99	-.6501	-.6501	.1224	-.1253	-.0142	2.01	5.74	.2238	2.28
60	.50	5.22	-.4224	-.05	4.07	-.6647	-.6647	.1886	-.1937	-.0127	2.05	5.63	.2125	2.23
72	.74	5.59	-.4417	-.05	4.15	-.6777	-.6777	.2188	-.2201	-.0225	2.15	5.57	.2092	2.19

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 2.98
 .02

ALTITUDE (MO) - 27

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN XP	S.D. XP	R (X, XP)	MEAN YP	S.D. YP	R (Y, YP)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	.15	3.63	-.2790	-.01	3.16	-.4571	-.4571	.0899	-.0812	.0008	2.35	6.64	.2323	2.92
24	.30	3.99	-.3025	-.01	3.64	-.5309	-.5309	.0955	-.0429	-.0191	2.45	6.58	.2457	2.80
36	.48	4.75	-.3524	-.01	3.94	-.5798	-.5798	.1293	-.1142	-.0097	2.54	6.44	.2475	2.69
48	.84	5.15	-.3830	.01	4.38	-.6475	-.6475	.1732	-.1739	-.0218	2.63	6.38	.2405	2.51
60	.80	5.67	-.4156	.01	4.59	-.6770	-.6770	.2080	-.2295	-.0225	2.74	6.27	.2328	2.41
72	.97	6.04	-.4281	.01	4.59	-.6751	-.6751	.2327	-.2439	-.0307	2.88	6.23	.2209	2.42

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 3.93
 .10

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(AT T)
Y = V(AT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
10	1/65 - 12/74	0	90.0	1.33	2.53	-.5614	-1.25	2.64	620
10	1/65 - 12/74	1	90.0	.07	2.98	-.0323	-1.94	5.27	620
10	1/65 - 12/74	2	90.0	.54	4.49	-.2667	-1.64	6.21	620
10	1/65 - 12/74	3	90.0	2.14	6.17	-.2152	-2.02	7.35	620
10	1/65 - 12/74	4	90.0	3.91	7.78	-.0889	-2.51	8.72	620
10	1/65 - 12/74	5	90.0	5.60	8.92	.0530	-2.67	9.83	620
10	1/65 - 12/74	6	90.0	7.01	10.14	.1045	-2.71	11.23	620
10	1/65 - 12/74	7	90.0	8.49	11.69	.1505	-2.67	12.74	620
10	1/65 - 12/74	8	90.0	9.88	13.01	.2050	-2.74	14.36	620
10	1/65 - 12/74	9	90.0	11.35	14.29	.2673	-2.69	15.55	620
10	1/65 - 12/74	10	90.0	13.09	15.02	.3007	-2.82	16.26	620
10	1/65 - 12/74	11	90.0	14.94	15.18	.3209	-2.68	16.24	620
10	1/65 - 12/74	12	90.0	16.63	14.67	.3216	-2.55	15.43	620
10	1/65 - 12/74	13	90.0	18.81	12.86	.2936	-2.27	13.41	620
10	1/65 - 12/74	14	90.0	16.02	11.22	.2697	-1.82	11.68	620
10	1/65 - 12/74	15	90.0	14.38	9.19	.2588	-1.59	9.68	620
10	1/65 - 12/74	16	90.0	11.99	7.65	.1974	-1.49	7.80	620
10	1/65 - 12/74	17	90.0	8.97	6.21	.1603	-1.30	5.99	620
10	1/65 - 12/74	18	90.0	5.97	5.02	.1535	-1.25	4.53	620
10	1/65 - 12/74	19	90.0	3.59	4.44	.2103	-1.33	3.54	620
10	1/65 - 12/74	20	90.0	2.21	4.27	.2332	-1.22	3.42	620
10	1/65 - 12/74	21	90.0	1.59	4.31	.2035	-1.21	3.14	620
10	1/65 - 12/74	22	90.0	1.43	4.33	.2176	-.96	2.91	620
10	1/65 - 12/74	23	90.0	1.43	4.55	.1465	-.77	2.89	620
10	1/65 - 12/74	24	90.0	1.92	4.98	.1258	-.66	2.54	620
10	1/65 - 12/74	25	90.0	2.34	5.48	.0966	-.45	2.89	620
10	1/65 - 12/74	26	90.0	3.28	6.23	.1811	-.21	3.00	620
10	1/65 - 12/74	27	90.0	4.38	6.91	.2076	-.15	3.30	620

ALTIMETER (KM) - 0

ALTITUDE (KM) - !

330

- 2 -
MILEAGE (KM)

CONDITIONAL BIVARIATE NORMAL STATISTICS

Altitude (km) ~ 3

CONDITIONAL BIVARIATE NORMAL STATISTICS

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (932:4) - VANZENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN Y	R (XP,YP)	MEAN GIVEN Y	S.D. GIVEN Y
12	24	7.45	8.51	.0937	-1.43	10.27	600	4.67	7.32	.0895	4.57	7.47	6.52	-.82	.53	9.56	8.91
36	48							4.60	7.23	.0912	4.61	7.07			-.14	8.43	8.26
60	72							4.66	6.96	.0913	4.66	6.96			-.47	8.20	8.12
								4.68	6.88	.1010	4.68	6.88			-.80	8.12	8.12

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN Y	R (XP,YP)	MEAN GIVEN Y	S.D. GIVEN Y
12	24	9.69	10.28	.1543	-1.34	11.68	600	5.88	9.59	.1621	5.88	9.59	8.68	-.81	.90	10.86	10.13
36	48							5.87	8.81	.1589	5.87	8.81			.05	9.63	9.44
60	72							5.89	8.58	.1634	5.89	8.58			-.32	9.38	9.26
								5.91	8.50	.1728	5.91	8.50			-.61	9.38	9.26
								5.94	8.41	.1771	5.94	8.41			-.66	9.26	9.26

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION - 93214 - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 6

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	24	11.85	11.68	.2371	-1.53	13.60	600										
12	24	.18	7.77	-.3224	-.3520	.0717	-1.1678	7.10	10.96	.2476	1.43	12.58					
36	48	.31	10.54	-.4430	-.4877	.0025	-.1877	6.39	10.41	.2448	.50	11.79					
48	60	.47	12.08	-.5034	-.5332	-.0544	-.1909	7.01	10.06	.2407	.06	11.22					
60	72	.62	13.08	-.5420	-.5849	-.0735	-.1682	7.01	9.80	.2507	-.36	11.01					
72		.76	13.53	-.5928	-.6285	-.0925	-.1358	6.93	9.67	.2597	-.70	10.99					
84		.80	13.93	-.6769	-.6940	-.0954	-.1510	7.03	9.53	.2555	-.68	10.83					

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

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ALTITUDE (KM) - 7

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
12	24	11.89	13.05	.2947	-1.65	15.67	600										
12	24	.17	8.48	-.3181	-.3723	.0085	-.1590	8.04	12.34	.2990	1.03	14.48					
36	48	.33	11.76	-.4434	-.4912	-.0228	-.1925	7.93	11.68	.2940	.07	13.61					
48	60	.50	13.44	-.5021	-.5555	-.1158	-.2087	7.95	11.28	.2915	-.17	12.98					
60	72	.64	14.72	-.5344	-.5853	-.1192	-.1983	8.01	11.03	.3024	-.38	12.68					
72		.80	15.90	-.5518	-.5943	-.1349	-.1793	8.01	10.89	.3083	-.69	12.59					
84		.85	16.60	-.5756	-.6103	-.1550	-.2029	8.02	10.64	.2942	-.74	12.40					

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
		15.57	14.45	.3273	-1.70	17.69	600						14.69	-.95		
12		.20	9.34	-.3243	-.03	13.60		-.3655	.2597	-.0709	8.61	13.66	.3302		-.08	15.45
24		.37	13.07	-.4515	-.11	18.42		-.4962	.3774	-.1611	8.59	12.89	.3142		-.69	15.35
36		.55	14.85	-.5090	-.14	20.53		-.5532	.3720	-.1732	8.72	12.43	.3155		-.65	14.70
48		.74	15.81	-.5374	-.13	21.50		-.5802	.3456	-.1547	8.90	12.18	.3285		-.48	14.38
60		.92	16.25	-.5483	-.10	21.72		-.5876	.3272	-.1570	8.95	12.08	.3386		-.69	14.30
72		.96	16.97	-.5735	-.10	22.17		-.6012	.3431	-.1725	8.96	11.83	.3310		-.73	14.12

ALTITUDE (KM) - 9

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN YP	S.D. YP
		17.27	15.71	.3727	-1.64	19.22	600						16.35	-.67		
12		.23	10.27	-.3302	-.01	14.52		-.3576	.3669	-.1242	9.30	14.82	.3702		-1.08	17.95
24		.41	14.15	-.4529	-.09	20.00		-.4923	.4224	-.2016	9.34	14.00	.3572		-1.20	16.73
36		.60	16.30	-.5182	-.16	22.32		-.5520	.4103	-.2138	9.52	13.45	.3594		-1.11	16.03
48		.79	17.40	-.5463	-.17	23.19		-.5722	.3943	-.1866	9.77	13.15	.3730		-.73	15.75
60		.99	17.87	-.5574	-.12	23.44		-.5798	.3620	-.1801	9.86	13.04	.3867		-.81	15.65
72		1.05	18.56	-.5794	-.09	23.86		-.5928	.3719	-.1937	9.85	12.80	.3850		-.87	15.47

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANCEBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 10

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	24	19.06	16.91	.4074	-1.77	20.58	600						18.13	-.86					
12	24	.22	11.18	-.3228	-.03	15.29		.22	11.18	-.3228	-.03	15.29			.22	11.18	-.3228	-.03	15.29
36	48	.40	15.20	-.4503	-.14	21.35		.40	15.20	-.4503	-.14	21.35			.40	15.20	-.4503	-.14	21.35
36	48	.52	17.33	-.5098	-.25	23.92		.52	17.33	-.5098	-.25	23.92			.52	17.33	-.5098	-.25	23.92
48	60	.83	18.49	-.5374	-.26	24.74		.83	18.49	-.5374	-.26	24.74			.83	18.49	-.5374	-.26	24.74
60	72	1.03	19.09	-.5503	-.20	24.92		1.03	19.09	-.5503	-.20	24.92			1.03	19.09	-.5503	-.20	24.92
72		1.07	19.93	-.5763	-.18	25.43		1.07	19.93	-.5763	-.18	25.43			1.07	19.93	-.5763	-.18	25.43

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (M) - 11

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	24	20.59	17.40	.4371	-1.34	20.68	600						19.80	-.42					
12	24	.24	10.93	-.3170	-.04	14.74		.24	10.93	-.3170	-.04	14.74			.24	10.93	-.3170	-.04	14.74
36	48	.46	14.95	-.4325	-.06	20.53		.46	14.95	-.4325	-.06	20.53			.46	14.95	-.4325	-.06	20.53
36	48	.71	17.11	-.4900	-.19	23.38		.71	17.11	-.4900	-.19	23.38			.71	17.11	-.4900	-.19	23.38
48	60	.88	18.48	-.5261	-.22	24.07		.88	18.48	-.5261	-.22	24.07			.88	18.48	-.5261	-.22	24.07
60	72	1.11	19.12	-.5419	-.17	24.43		1.11	19.12	-.5419	-.17	24.43			1.11	19.12	-.5419	-.17	24.43
72		1.15	20.01	-.5682	-.11	25.23		1.15	20.01	-.5682	-.11	25.23			1.15	20.01	-.5682	-.11	25.23

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	24	10.74	16.50	.4477	-1.30	19.37
36	48	10.96	15.69	.4475	-.88	18.15
36	48	11.20	15.17	.4485	-.93	17.33
48	60	11.34	14.79	.4553	-.84	17.14
60	72	11.42	14.62	.4623	-.84	17.05
72		11.42	14.32	.4656	-.78	16.74

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (32214) - YANKEEBURG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	24	21.74	16.96	.4380	-1.90	19.12	500	11.10	16.15	.4483	-1.02	18.03
36	48							11.27	15.35	.4575	-.56	16.08
60	72							11.50	14.83	.4621	-.57	15.03
								11.78	14.49	.4653	-.28	15.82
								11.87	14.28	.4743	-.22	15.68
								11.89	13.96	.4774	-.11	5.34

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
21.15	-1.11

ALTITUDE (KM) - 13

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	24	21.38	15.16	.4344	-1.41	15.42	600	11.11	14.43	.4487	.55	15.52
36	48							11.04	13.75	.4593	-.07	14.56
60	72							11.28	13.68	.4614	-.10	13.96
								11.64	13.04	.4638	.34	13.48
								11.80	12.81	.4779	.52	13.33
								11.79	12.52	.4841	.48	13.10

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
20.82	-.04

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CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT	MEAN X _P	S.D. X _P	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN Y _P	S.D. X _P	S.D. Y _P
12	.15	7.63	.06	-.3256	.3198	-1.0553	11.96	4.30	1.80	12.81	
24	.26	10.66	.05	-.4653	.3670	-1.266	11.37	4.663	1.16	11.93	
36	.42	12.27	.02	-.5134	.3657	-1.547	11.03	4.627	.93	11.46	
48	.58	13.13	-.03	-.5610	.3714	-1.661	10.80	4.629	.90	11.21	
60	.70	13.78	-.02	-.5815	.3536	-1.557	10.65	4.603	.96	11.01	
72	.80	14.28	-.03	-.5913	.3446	-1.593	10.49	4.507	.89	10.82	

ALTITUDE (KM) - 15

QUADRIVARIATE NORMAL STATISTICS OF X, Y, ZP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (83214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
14.62	8.65	8.65	.3863	-.33	9.13	600						13.80	-.29
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.13	5.31	-.3125	.08	5.77	-.3170	.2715	-.1990	8.43	8.15	.4010	2.85	8.59
24	.26	7.20	-.4207	.06	8.12	-.4370	.2395	-.2207	8.28	7.80	.4094	1.73	8.16
36	.38	8.33	-.4825	.09	9.47	-.5100	.3106	-.2243	8.24	7.54	.4110	1.17	7.82
48	.49	9.06	-.5153	.12	10.39	-.5522	.3255	-.2219	8.30	7.33	.4152	.87	7.59
60	.64	9.68	-.5388	.13	10.92	-.5735	.3474	-.2235	8.42	7.27	.4179	.70	7.46
72	.67	10.00	-.5583	.13	11.32	-.5943	.3435	-.2252	8.41	7.16	.4248	.72	7.32

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
12.24	7.42	7.42	.3477	-.53	7.28	500						11.47	-.60
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.09	5.20	-.3530	.04	4.62	-.3242	.1691	-.1718	6.94	6.89	.3731	1.47	6.82
24	.23	6.39	-.4212	.06	6.31	-.4295	.2382	-.1974	7.14	6.68	.3673	.99	6.52
36	.34	7.34	-.4828	.10	7.47	-.5050	.2309	-.1872	7.07	6.47	.3788	.60	6.24
48	.43	7.77	-.5029	.18	8.30	-.5647	.2504	-.1714	7.11	6.40	.3871	.41	6.03
60	.50	8.22	-.5249	.20	8.78	-.5802	.2677	-.1721	7.16	6.31	.3928	.34	5.90
72	.57	8.43	-.5382	.23	9.08	-.6016	.2787	-.1737	7.16	6.25	.3958	.31	5.79

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.09	4.52	-.3505	.03	4.03	-.3558	.0827	-.3558	.0827	.0595	-.1159	-.1159	5.15	6.04	.3478	.63	5.23
24	.18	5.45	-.4253	.07	5.09	-.4516	.0936	-.4516	.0936	.0461	-.1395	-.1395	5.16	5.83	.3601	.51	4.99
36	.25	6.08	-.4787	.12	6.10	-.5385	.1228	-.5385	.1228	-.0061	-.1216	-.1216	5.09	5.67	.3744	.21	4.73
48	.36	6.58	-.5054	.19	6.64	-.5759	.1675	-.5759	.1675	-.0445	-.1241	-.1241	5.20	5.58	.3799	.14	4.59
60	.42	6.78	-.5124	.23	6.96	-.5946	.2078	-.5946	.2078	-.0872	-.1225	-.1225	5.24	5.56	.3747	.03	4.52
72	.47	7.01	-.5315	.20	7.12	-.6085	.2182	-.6085	.2182	-.1119	-.1201	-.1201	5.21	5.48	.3731	-.10	4.46

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.03	4.35	-.3619	.03	3.83	-.4014	.1356	-.4014	.1356	.0278	-.1270	-.1270	4.05	5.62	.3089	.16	4.33
24	.08	5.06	-.4237	.06	4.52	-.4790	.1592	-.4790	.1592	.0540	-.1638	-.1638	4.10	5.44	.3232	.30	4.13
36	.14	5.50	-.4641	.11	5.28	-.5550	.1409	-.5550	.1409	-.0219	-.1234	-.1234	3.95	5.35	.3285	-.07	3.94
48	.24	6.00	-.4923	.16	5.79	-.5960	.1411	-.5960	.1411	-.0332	-.1024	-.1024	4.02	5.27	.3532	-.12	3.80
60	.29	6.23	-.5093	.20	6.02	-.6121	.1634	-.6121	.1634	-.0677	-.0959	-.0959	4.01	5.21	.3552	-.21	3.75
72	.32	6.56	-.5406	.20	6.00	-.6081	.1474	-.6081	.1474	-.0546	-.0983	-.0983	4.01	5.09	.3642	-.20	3.76

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QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANCEBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/55 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (M) - 20

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
DT	5.19	6.06	.2919	-1.39	4.14	600										
12	.02	4.43	-.3577	-4.385	.1219	.0127	-.1035	5.62	.3251	-.30	3.71	3.20	5.62	.3251	-.30	3.71
24	.01	4.98	-.4133	-4.781	.1464	-.0153	-.1190	5.51	.3229	-.35	3.63	3.19	5.51	.3229	-.35	3.63
36	.07	5.41	-.4521	-5.530	.1244	-.0565	-.0845	5.40	.3376	-.43	3.45	3.08	5.40	.3376	-.43	3.45
48	.14	5.78	-.4856	-5.918	.1557	-.0654	-.1018	5.35	.3474	-.41	3.34	3.12	5.35	.3474	-.41	3.34
60	.19	6.27	-.5153	-6.247	.1718	-.0859	-.0877	5.30	.3526	-.44	3.23	3.12	5.30	.3526	-.44	3.23
72	.21			-6.517	.1435	-.0635	-.0602	5.19	.3768	-.44	3.26	3.13	5.19	.3768	-.44	3.26

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 4.39
 -1.63

ALTITUDE (M) - 21

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	S.D. X	R (XP, YP)	MEAN YP	S.D. YP
DT	4.37	6.18	.2403	-1.57	3.66	600										
12	.03	4.15	-.3333	-4.738	.0008	.0740	-.0512	5.81	.2915	-.46	3.21	2.83	5.81	.2915	-.46	3.21
24	.05	4.63	-.3898	-5.131	.0290	.0899	-.0925	5.71	.2887	-.42	3.12	2.76	5.71	.2887	-.42	3.12
36	.05	5.25	-.4205	-5.781	.0249	.0512	-.0767	5.59	.3035	-.52	2.97	2.65	5.59	.3035	-.52	2.97
48	.06	5.52	-.4393	-6.039	.1027	-.0164	-.0959	5.54	.2832	-.56	2.86	2.65	5.54	.2832	-.56	2.86
60	.08	5.81	-.4564	-6.243	.0795	-.0216	-.0705	5.45	.3031	-.60	2.85	2.63	5.45	.3031	-.60	2.85
72	.08	6.13	-.4535	-6.528	.1132	-.0537	-.0795	5.36	.2933	-.63	2.85	2.74	5.36	.2933	-.63	2.85

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X
 3.44
 -1.76

QUADRAVARIATE AND CO-CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
	4.13	6.64	.2406	-1.79	3.60	500
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)
12	.02	4.21	-.3129	-.4895	.0158	-.0509
24	.02	4.59	-.3400	-.5556	.0441	.0721
36	.01	5.20	-.3887	-.6019	.1230	-.0274
48	-.05	5.61	-.4173	-.6358	.1684	-.0761
60	-.07	5.79	-.4283	-.6598	.1798	-.1251
72	-.11	6.18	-.4582	-.6683	.1782	-.1359

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
3.05	-1.91

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN X _P	S.D. X _P	R (X,X _P)	MEAN Y _P	S.D. Y _P	R (Y,Y _P)	R (X _P ,Y _P)	R (X _P ,Y)	N
12	-.01	4.08	-.2764	.01	3.62	-.5226	.1050	.0066	-
24	-.05	4.48	-.2987	.01	3.89	-.5554	.1028	.0626	-
36	-.09	5.10	-.3385	.01	4.22	-.6029	.1103	.0332	-
48	-.15	5.48	-.3638	-.00	4.50	-.6465	.1328	.0168	-
60	-.21	5.74	-.3757	-.04	4.59	-.6593	.1682	-.0651	-
72	-.26	6.11	-.4048	-.06	4.48	-.6444	.1630	-.0694	-

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
2.86	-1.75

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/85 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y	
	4.78	7.94	.2319	-1.32	3.29	600		3.27	-1.46	
	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	S.D. YP
12	-.02	3.96	-.2454	-.4702	.0295	.0340	3.26	7.70	.2693	2.90
24	-.10	4.61	-.2754	-.5404	.0790	.0773	3.41	7.62	.2739	2.74
36	-.15	5.31	-.3140	-.5861	.0447	.1007	3.39	7.52	.2942	2.63
48	-.21	5.71	-.3381	-.6307	.0737	.0367	3.39	7.44	.2966	2.51
60	-.29	6.03	-.3592	-.6600	.1106	.0340	3.29	7.39	.2907	2.45
72	-.38	6.39	-.3823	-.6817	.1226	.0113	3.21	7.32	.2964	2.39

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. XP	R (XP,Y)	MEAN XP	S.D. YP
		5.71	8.91	.3116	-.98	3.51	600	3.83	-1.25				
DT	HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (XP,Y)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
12		-.09	4.10	-.2196	-.4823	-.0234	.0713	3.94	8.69	.3656	-.15	3.07	
24		-.15	4.53	-.2394	-.5291	.0261	.1434	4.09	8.62	.3781	.13	2.93	
36		-.24	5.11	-.2631	-.5932	.0904	.1018	4.12	8.56	.3794	.09	2.77	
48		-.31	5.54	-.2864	-.6238	.0835	.1009	4.06	8.50	.3925	.03	2.69	
60		-.43	6.17	-.3238	-.6484	.1283	.0523	3.99	8.39	.3870	-.03	2.63	
72		-.55	6.37	-.3374	-.6603	.1695	-.0013	3.87	8.36	.3797	-.12	2.61	

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - NOVEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 26

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	R (XP, X)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	6.99	10.02	.3818	-.85	3.54	600	-.00	3.09	-.0648	.1110	-.0238	3.17	4.96	-1.12	4.71	9.84	.4401	.08	3.00
24							-.01	3.59	.0348	.1247	-.0749	3.00			4.87	9.76	.4533	.27	3.00
36							-.01	3.89	.1276	.0719	-.1073	2.89			4.98	9.70	.4489	.24	2.89
48							-.05	4.14	.1532	.0488	-.1214	2.80			4.98	9.63	.4525	.17	2.80
60							-.06	4.45	.1970	-.0144	-.1237	2.70			4.83	9.55	.4600	.04	2.70
72							-.12	4.42	.2325	-.0547	-.1289	2.73			4.70	9.49	.4489	-.06	2.73

ALTITUDE (KM) - 27

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	R (XP, X)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	8.57	11.45	.4206	-.75	4.00	600	.01	3.41	-.0674	.1208	-.0363	3.10	6.21	-1.05	5.91	11.29	.4763	.41	3.10
24							.00	3.88	.0829	.0892	-.0818	3.00			6.05	11.21	.4822	.48	3.00
36							-.04	4.40	.1056	.0736	-.0941	2.89			6.01	11.13	.4997	.38	2.89
48							-.05	4.75	.1690	.0212	-.1174	2.80			6.03	11.05	.4985	.29	2.80
60							-.09	4.89	.1922	-.0019	-.1215	2.70			5.88	10.97	.5027	.19	2.70
72							-.15	4.98	.2095	-.0394	-.1194	2.73			5.69	10.91	.5032	.07	2.73

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDEBERG

X = UVIAT T)
Y = VIAT T)

MONTH	PER. OF REC.	ALT KM.	ALPHA DEG.	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N
11	1/65 - 12/74	0	90.0	.70	2.69	-.5711	-.92	3.11	600
11	1/65 - 12/74	1	90.0	.42	3.83	-.1256	-1.18	5.69	600
11	1/65 - 12/74	2	90.0	2.22	5.19	.0002	-1.04	7.98	600
11	1/65 - 12/74	3	90.0	4.88	6.89	.0524	-1.44	9.22	600
11	1/65 - 12/74	4	90.0	7.45	8.51	.0937	-1.43	10.27	600
11	1/65 - 12/74	5	90.0	9.69	10.28	.1543	-1.34	11.68	600
11	1/65 - 12/74	6	90.0	11.85	11.68	.2371	-1.53	13.60	600
11	1/65 - 12/74	7	90.0	13.78	13.06	.2947	-1.65	15.67	600
11	1/65 - 12/74	8	90.0	15.57	14.45	.3273	-1.70	17.69	600
11	1/65 - 12/74	9	90.0	17.27	15.71	.3727	-1.64	19.22	600
11	1/65 - 12/74	10	90.0	19.06	16.91	.4074	-1.77	20.59	600
11	1/65 - 12/74	11	90.0	20.59	17.40	.4371	-1.34	20.66	600
11	1/65 - 12/74	12	90.0	21.74	18.96	.4380	-.90	19.12	600
11	1/65 - 12/74	13	90.0	21.39	15.16	.4344	-.41	16.42	600
11	1/65 - 12/74	14	90.0	19.89	12.61	.4379	.11	13.56	600
11	1/65 - 12/74	15	90.0	17.41	10.42	.4373	-.08	11.12	600
11	1/65 - 12/74	16	90.0	14.82	8.65	.3863	-.30	9.13	600
11	1/65 - 12/74	17	90.0	12.24	7.42	.3477	-.53	7.26	600
11	1/65 - 12/74	18	90.0	9.12	6.47	.3127	-.79	5.63	600
11	1/65 - 12/74	19	90.0	6.91	6.05	.2838	-1.05	4.75	600
11	1/65 - 12/74	20	90.0	5.19	6.06	.2919	-1.39	4.14	600
11	1/65 - 12/74	21	90.0	4.37	6.18	.2403	-1.56	3.66	600
11	1/65 - 12/74	22	90.0	4.13	6.64	.2406	-1.79	3.60	600
11	1/65 - 12/74	23	90.0	4.18	7.17	.2296	-1.70	3.45	600
11	1/65 - 12/74	24	90.0	4.78	7.94	.2319	-1.32	3.29	600
11	1/65 - 12/74	25	90.0	5.71	8.91	.3116	-.98	3.51	600
11	1/65 - 12/74	26	90.0	6.99	10.02	.3818	-.85	3.54	600
11	1/65 - 12/74	27	90.0	8.57	11.45	.4206	-.75	4.00	600

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDEBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 0

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.01	4.27	-.7535	-.01	3.76	-.5959	-.5959	3.76	614	.27	1.86	-.4734	-.63	2.59
24	.02	3.24	-.5703	-.05	3.72	-.5241	-.5241	3.72		.28	2.33	-.5333	-.63	2.59
36	.02	4.39	-.7763	-.06	4.37	-.6855	-.6855	4.37		.27	1.79	-.4860	-.64	2.32
48	.03	3.28	-.5873	-.03	4.08	-.6425	-.6425	4.08		.26	2.31	-.5422	-.65	2.45
60	.06	4.34	-.7685	-.11	4.47	-.7291	-.7291	4.47		.27	1.81	-.4857	-.66	2.26
72	.07	3.32	-.5881	-.11	4.23	-.6705	-.6705	4.23		.28	2.23	-.5508	-.66	2.37

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
.33	-.96

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 OF POOR QUALITY

ALTITUDE (KM) - 1

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	.04	4.27	-.4773	-.05	6.01	-.4120	-.4120	6.01	614	.95	3.76	-.0785	-1.09	6.53
24	.03	5.44	-.6283	-.13	7.87	-.5235	-.5235	7.87		.79	3.43	-.0665	-1.28	6.06
36	.02	5.64	-.6355	-.19	8.73	-.6009	-.6009	8.73		.69	3.39	-.0760	-1.39	5.80
48	.01	5.83	-.6693	-.23	9.10	-.6271	-.6271	9.10		.67	3.25	-.0458	-1.44	5.66
60	.03	6.15	-.7042	-.30	9.44	-.6521	-.6521	9.44		.65	3.11	-.0622	-1.51	5.52
72	.03	6.42	-.7324	-.35	9.71	-.6715	-.6715	9.71		.63	3.00	-.0703	-1.57	5.41

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

GIVEN X	GIVEN Y
1.39	-2.33

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 2

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	MEAN Y	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	3.67	5.74	.0425	-3.59	8.52	614							4.00	-3.15						
24																				
36																				
48																				
60																				
72																				

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

ALTITUDE (KM) - 3

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X	GIVEN X	MEAN Y	GIVEN Y	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
12	6.84	7.49	.0952	-4.29	9.88	614							7.02	-3.50						
24																				
36																				
48																				
60																				
72																				

CONDITIONAL BIVARIATE NORMAL STATISTICS
 FOR XP AND YP

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 4

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y		
12	9.70	9.34	.1001	-4.88	11.61	614						9.92	-4.29		
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	R (Y,YP)	P (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-0.05	6.76	-0.3551	-1.12	8.00	.1087	-.3420	.2014	.1087	-.2579	6.14	8.51	.0831	.59	10.71
24	-1.11	9.39	-.4293	-1.24	11.22	.0888	-.4845	.1626	.0888	-.2294	5.58	8.22	.0776	-.36	10.01
36	-.21	12.76	-.5674	-.33	12.73	.0399	-.5536	.1133	.0399	-.1633	5.12	7.63	.0974	-1.67	9.59
48	-.28	11.46	-.6063	-.47	13.57	.0233	-.5824	.0839	.0233	-.0915	4.81	7.33	.1321	-2.42	9.38
60	-.28	12.07	-.6457	-.59	13.67	.0207	-.6394	.0319	.0207	-.0824	4.72	7.12	.1449	-2.63	9.29
72	-.34	12.52	-.6700	-.73	14.14	-.0030	-.6119	.0515	-.0030	-.0612	4.64	6.93	.1325	-2.87	9.18

ALTITUDE (KM) - 5

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
12	12.14	10.91	.1582	-5.24	13.00	614						12.44	4.72	
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	P (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	S.D. YP
12	-1.11	7.71	-.3525	-1.12	9.20	.0710	-.2555	7.55	10.05	.1399	1.10	11.95		
24	-1.17	10.78	-.4790	-.26	12.77	.0277	-.2334	6.93	9.48	.1387	-.72	11.17		
36	-.29	12.63	-.5690	-.37	14.53	.0189	-.1582	6.39	8.92	.1444	-1.74	10.69		
48	-.33	13.43	-.6231	-.53	15.46	.0245	-.1341	6.12	8.68	.1722	-2.49	10.46		
60	-.40	14.22	-.6458	-.72	15.83	.0176	-.1195	6.04	8.36	.1824	-2.72	10.33		
72	-.45	14.77	-.6652	-.86	16.37	-.0493	-.1260	5.96	8.14	.1724	-2.94	10.15		

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ALTITUDE (KM)										- 6										QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP																													
MEAN					S.D.					R					MEAN					S.D.					R					MEAN					S.D.					R					MEAN					S.D.									
X					Y					(X,Y)					Y					Y					Y					X					Y					X					Y					X					Y				
14.29					12.32					.2265					-5.71					14.75					614					14.63					-5.17																								
DT	HR	MEAN	S.D.	R	MEAN	S.D.	R	MEAN	S.D.	R	MEAN	S.D.	R	R	R	R	R	R	MEAN	S.D.	R	MEAN	S.D.	R	R	R	R	MEAN	S.D.	R	MEAN	S.D.	R	R	R	R																							
12	12	8.60	3.393	11.01	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258	3258																							
24	24	12.12	4.691	15.03	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930	2930																							
36	36	14.23	5.593	17.13	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694	2694																							
48	48	15.38	6.032	17.77	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931	1931																							
60	60	16.21	6.402	18.31	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780	1780																							
72	72	16.86	6.658	18.87	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567	1567																							

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 8

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN Y	MEAN R (XP, YP)	S.D. R (XP, YP)
12	18.38	15.58	.3447	-6.37	18.08	614	-1.14	10.88	-.3346	-1.08	13.78	18.98	-5.72	.47	16.51
24							-.29	15.48	-.4751	-.19	18.71			-1.22	15.22
36							-.37	18.11	-.5586	-.34	21.04			-2.39	14.50
48							-.49	19.52	-.6365	-.58	21.63			-2.88	14.25
60							-.53	20.53	-.6433	-.83	22.50			-3.28	13.99
72							-.57	21.26	-.6644	-1.08	23.25			-3.66	13.74

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 9

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP	MEAN GIVEN X	S.D. GIVEN Y	MEAN R (XP, YP)	S.D. R (XP, YP)
12	20.34	16.77	.3720	-6.80	19.62	614	-1.14	11.44	-.3274	-1.09	14.45	21.06	-5.91	.46	18.06
24							-.28	16.54	-.4721	-.18	19.90			-2.32	16.35
36							-.36	19.32	-.5528	-.30	22.71			-3.26	15.75
48							-.47	20.96	-.6234	-.57	23.41			-3.54	15.49
60							-.51	22.04	-.6393	-.84	24.12			-3.73	15.24
72							-.57	22.68	-.6557	-1.11	24.76			-3.97	15.03

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

ALTITUDE (KM) - 10

AL TITUDE (KM) - 11

QUADRIVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP				
DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
		23.61	17.02	.3029	-6.81	20.58	614							

QUADRIVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/55 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 12

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X GIVEN Y	S.D. X GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	24.16	15.54	.3924	-5.94	18.90	614	-1.13	12.44	.3364	-1.276	11.87	24.91	14.86	.3991	11.87	14.86	-4.61	17.79
24							-1.14	18.05	.4118	-2.344	11.74		14.00	.3963	11.74	14.00	-5.13	16.45
36							-1.16	21.03	.4122	-2.737	11.49		13.22	.3836	11.49	13.22	-5.32	15.45
48							-1.29	22.03	.4153	-2.977	11.47		12.62	.3820	11.47	12.62	-5.19	15.04
60							-1.57	22.65	.3817	-2.975	11.90		12.24	.3952	11.90	12.24	-4.56	14.78
72							-1.73	22.97	.3646	-2.235	12.14		12.01	.3960	12.14	12.01	-3.95	14.66

ALTITUDE (KM) - 13

QUADRIVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	MEAN X GIVEN Y	S.D. X GIVEN Y	R (XP, YP)	MEAN XP	S.D. XP	MEAN YP	S.D. YP
12	23.50	13.93	.3874	-4.83	16.29	614	-1.12	10.12	.3540	-1.235	11.18	24.24	13.31	.3995	11.18	13.31	-4.76	15.46
24							-1.15	15.04	.3726	-2.159	11.18		12.60	.3923	11.18	12.60	-4.82	14.38
36							-1.16	17.72	.3835	-2.558	10.92		11.91	.3910	10.92	11.91	-5.01	13.52
48							-1.28	18.87	.3937	-2.783	10.97		11.37	.3837	10.97	11.37	-4.68	13.08
60							-1.51	19.33	.3623	-2.534	11.08		12.97	.3959	11.08	12.97	-4.29	12.86
72							-1.64	19.51	.3384	-2.255	11.27		12.77	.4105	11.27	12.77	-3.88	12.75

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATION (93214) - VANDENBERG
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
		21.76	11.80	.3968	-3.80	13.99	614						22.52	-2.29					
12		7.66	31.43	-.07	8.42	2837	-.0665	11.15	11.20	.4079	-1.84	13.32							
24		10.81	44.69	-.13	12.59	3606	-.1622	10.78	10.56	.4029	-2.86	12.45							
36		12.91	55.06	-.14	14.96	3772	-.2405	10.27	9.92	.4015	-3.73	11.72							
48		14.06	59.40	-.26	15.90	3772	-.2633	10.08	9.48	.4016	-3.92	11.34							
60		14.65	62.54	-.40	16.33	3586	-.2608	10.00	9.20	.4078	-3.95	11.13							
72		15.20	64.82	-.49	16.71	3491	-.2389	10.21	8.99	.4146	-3.43	10.99							

ALTITUDE (KM) - 14

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP										CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP									
DT	HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
		19.40	10.03	.4038	-3.18	11.76	614						20.21	-1.94					
12		6.54	31.48	-.05	7.12	2948	-.0437	10.10	9.51	.4184	-.80	11.17							
24		9.22	44.94	-.11	10.31	3415	-.1298	9.81	8.96	.4170	-1.53	10.50							
36		10.74	52.81	-.18	12.24	3519	-.1959	9.40	8.52	.4195	-2.50	9.95							
48		11.72	58.36	-.28	13.19	3518	-.2254	9.17	8.14	.4203	-2.84	9.58							
60		12.28	61.84	-.44	13.53	3541	-.2323	9.04	7.88	.4184	-2.89	9.44							
72		12.57	63.14	-.52	13.84	3381	-.2100	9.18	7.78	.4296	-2.53	9.32							

ALTITUDE (KM) - 15

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
STATION (93214) - VANDENBERG
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 16

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	-0.03	6.19	-.3470	-.08	6.06	-.3129	-.3129	.1723	-.0295	8.04	8.31	.4392	-1.22	9.32
24	-0.06	8.21	-.4618	-.10	8.46	-.4404	-.4404	.2738	-.1133	7.86	7.86	.4445	-1.75	8.81
36	-0.12	9.42	-.5345	-.16	9.89	-.5169	-.5169	.2962	-.1780	7.55	7.59	.4499	-2.45	8.40
48	-0.19	10.25	-.5835	-.28	10.80	-.5700	-.5700	.2924	-.1944	7.47	7.16	.4555	-2.51	8.06
60	-0.29	10.65	-.6227	-.41	11.24	-.5982	-.5982	.3282	-.2242	7.30	6.93	.4363	-2.57	7.85
72	-0.30	10.75	-.6273	-.48	11.69	-.6217	-.6217	.3308	-.2262	7.39	6.90	.4337	-2.47	7.68

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
17.03	-1.73

ALTITUDE (KM) - 17

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
12	-0.01	5.67	-.3716	-.05	5.49	-.3314	-.3314	.1063	-.0006	6.39	7.29	.4894	-.93	7.80
24	-0.10	7.08	-.4582	-.07	7.37	-.4529	-.4529	.1681	-.0598	6.09	6.99	.5138	-1.35	7.37
36	-0.16	8.09	-.5286	-.13	8.34	-.5152	-.5152	.2271	-.1368	5.85	6.67	.5191	-1.95	7.08
48	-0.21	8.44	-.5612	-.26	9.14	-.5715	-.5715	.2590	-.1826	5.69	6.51	.5129	-2.23	6.78
60	-0.28	8.90	-.5941	-.33	9.67	-.6104	-.6104	.2981	-.2101	5.60	6.32	.5010	-2.16	6.54
72	-0.30	9.17	-.6147	-.41	9.95	-.6261	-.6261	.3250	-.2275	5.69	6.20	.4854	-2.13	6.44

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
13.85	-1.55

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (193214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 18

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-06	5.04	-3711	-03	4.42	-3535	-3535	.1114	-0120	4.58	6.25	.5315	-1.11	5.93
24	-11	6.21	-4605	-06	5.76	-4604	-4604	.1834	-0576	4.50	5.97	.5559	-1.18	5.62
36	-14	6.77	-5039	-13	6.48	-5171	-5171	.2357	-1244	4.34	5.82	.5612	-1.55	5.42
48	-20	7.10	-5429	-25	6.98	-5652	-5652	.2974	-1837	4.20	5.65	.5401	-1.74	5.23
60	-23	7.38	-5717	-33	7.32	-6027	-6027	.3619	-2419	4.11	5.52	.5153	-1.86	5.05
72	-25	7.66	-5900	-35	7.49	-6160	-6160	.3611	-2401	4.15	5.44	.5186	-1.80	4.99

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
10.21	-1.66

ALTITUDE (KM) - 19

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-02	4.45	-3642	-00	3.80	-3822	-3822	.1120	-0179	3.01	5.66	.5204	-.90	4.52
24	-04	5.23	-4308	-05	4.72	-4745	-4745	.1574	-0082	2.97	5.48	.5405	-.95	4.31
36	-05	5.76	-4758	-09	5.34	-5408	-5408	.2394	-0901	2.87	5.35	.5378	-1.17	4.12
48	-10	6.04	-5124	-19	5.62	-5796	-5796	.2715	-1449	2.71	5.20	.5208	-1.38	4.00
60	-13	6.28	-5443	-28	5.84	-6118	-6118	.3170	-1948	2.66	5.10	.5014	-1.50	3.88
72	-15	6.64	-5711	-33	5.95	-6245	-6245	.3202	-1939	2.71	4.99	.5008	-1.48	3.83

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

GIVEN X	GIVEN Y
6.98	-2.07

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 20

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										</
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CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
4.62	-2.39

ALTITUDE (KM) - 21

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

DT HR	MEAN X	S.D. X	R (X, Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP, Y)	MEAN YP	S.D. YP	R (XP, YP)	MEAN Y	S.D. Y	R (Y, YP)	MEAN XP	S.D. XP	R (XP, YP)	MEAN YP	S.D. YP
	1.95	5.99	.2602	-2.71	3.95	614													-2.63	

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

GIVEN X	GIVEN Y
2.63	-2.63

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QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL
STATION (93214) - VANDENBERG
MONTH OF RECORD - DECEMBER
PERIOD OF RECORD - 1/65 - 12/74
ALPHA ANGLE - 90.0

ALTITUDE (KM) - 22

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	R	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y
	.45	6.38	.3123	-2.59		614							1.17	-2.55
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	
12	-.08	4.35	-.3462	-.02	3.52	-.4731	.0975	-.0671	-.03	5.99	.3582	-1.25	3.31	
24	-.18	4.98	-.3914	-.04	3.92	-.5383	.1525	-.1405	.13	5.85	.3628	-1.14	3.14	
36	-.23	5.33	-.4191	-.07	4.20	-.5766	.0097	-.1254	-.00	5.78	.3696	-1.20	3.06	
48	-.23	5.68	-.4470	-.12	4.54	-.6181	.1899	-.1463	-.02	5.70	.3645	-1.24	2.94	
60	-.29	6.02	-.4706	-.13	4.67	-.6336	.2517	-.1690	-.08	5.62	.3354	-1.28	2.90	
72	-.36	6.37	-.4927	-.16	4.89	-.6588	.2430	-.1680	-.13	5.55	.3327	-1.33	2.83	

ALTITUDE (KM) - 23

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

CONDITIONAL BIVARIATE NORMAL STATISTICS
FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP	GIVEN X	GIVEN Y	
	-.30	7.18	.2410	-2.53	3.56	614						.32	-2.57	
DT HR	MEAN XP	S.D. XP	R (X,XP)	MEAN YP	S.D. YP	R (Y,YP)	R (XP,YP)	R (XP,Y)	R (YP,X)	MEAN XP	S.D. XP	R (XP,YP)	MEAN YP	S.D. YP
12	-.08	4.36	-.3038	-.02	3.41	-.4746	.0138	.0307	-.0310	-.36	6.84	.2837	-1.26	3.13
24	-.15	5.26	-.3638	-.04	3.78	-.5343	.0722	.0577	-.1004	-.18	6.67	.2846	-1.21	2.99
36	-.23	5.46	-.3783	-.07	3.96	-.5621	.0953	.0307	-.0986	-.29	6.63	.2855	-1.22	2.93
48	-.29	5.92	-.4087	-.08	4.32	-.6087	.1846	-.0312	-.1362	-.34	6.54	.2849	-1.22	2.81
60	-.36	6.48	-.4396	-.10	4.45	-.6265	.2121	-.0858	-.1402	-.43	6.44	.2484	-1.26	2.77
72	-.46	6.80	-.4540	-.11	4.62	-.6491	.2498	-.1113	-.1696	-.44	6.39	.2272	-1.26	2.70

QUADRAVARIATE AND CONDITIONAL BIVARIATE NORMAL STATISTICS OF X, Y, XP, YP
 STATION (93214) - VANDENBERG
 MONTH OF RECORD - DECEMBER
 PERIOD OF RECORD - 1/65 - 12/74
 ALPHA ANGLE - 90.0

ALTITUDE (KM) - 24

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N		GIVEN X	GIVEN Y		S.D. XP	MEAN XP	S.D. YP	MEAN YP	S.D. YP
	-45	7.71	.2136	-2.77	3.49	614		.13	-2.79						

ALTITUDE (KM) - 25

QUADRAVARIATE NORMAL STATISTICS OF X, Y, XP, YP

CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT HR	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N	MEAN XP	S.D. XP	R (XP,Y)	MEAN YP	S.D. YP
	-70	8.55	.2615	-2.56	3.52	614					

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QUADRIVARIATE AND STATION (1932/14)	CONDITIONAL BIVARIATE NORMAL	STATISTICS OF	X. Y. XP. YP
- VANDENBERG		X =	U(AT T)
- DECEMBER		Y =	V(AT T)
MONTH OF RECORD		XP =	U(AT T + DT) - U(AT T)
PERIOD OF RECORD	- 1/55 - 12/74	YP =	V(AT T + DT) - V(AT T)
ALPHA ANGLE	- 90.0		

AL TITUDE (KM) - 25

•	QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP
•	CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP

DT	MEAN X _P	S.D. X _P	R (X,Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. X _P	R (X _P ,Y _P)	MEAN X _P	S.D. Y _P
12	-12	4.58	-0.04	-4.339	.0955	.0122	-0.561	-1.24	9.65	.3278	-1.24	3.54
25	-25	5.80	-.05	-4.897	.1495	-.0087	-0.902	-1.22	9.51	.3269	-1.22	3.43
36	-35	6.83	-.07	-5.149	.1795	-.0130	-1.204	-1.23	9.57	.3248	-1.23	3.36
48	-44	7.66	-.11	-5.627	.2232	-.0294	-1.543	-1.24	9.21	.3224	-1.24	3.23
60	-53	8.39	-.13	-6.016	.2386	-.0422	-1.765	-1.24	9.07	.3188	-1.24	3.12
72	-63	9.02	-.13	-6.125	.2562	-.0578	-1.914	-1.24	8.96	.3188	-1.24	3.09

ALTIMETER (KMH) - 27

QUADRAVARIATE NORMAL STATISTICS OF X,Y,XP,YP

*** * * CONDITIONAL BIVARIATE NORMAL STATISTICS FOR XP AND YP ***

DT	HR	MEAN X _P	S.D. X _P	R (X, X _P)	MEAN Y _P	S.D. Y _P	R (X, Y)	MEAN Y	S.D. Y	N	GIVEN X	GIVEN Y	S.D. X _P	R (X _P , Y _P)	MEAN Y _P	S.D. Y _P
12	12	4.65	1.882	-.06	3.55	1.167	.0120	-.3890	1.1772	814	.76	-2.74	11.50	-.3719	-1.30	4.17
24	24	6.07	2.420	-.09	4.33	1.772	.0130	-.4740	1.772				11.35	-.3809	-1.27	3.97
36	36	7.35	2.917	-.09	4.63	2.037	-.0135	-.5057	2.037				11.19	-.3943	-1.28	3.89
48	48	8.43	3.366	-.13	4.93	2.449	-.0234	-.5341	2.449				11.01	-.3954	-1.29	3.80
60	60	9.39	3.704	-.16	5.36	2.643	-.0342	-.5694	2.643				10.84	-.3925	-1.28	3.64
72	72	10.31	4.075	-.17	5.54	2.981	-.0511	-.5982	2.981				10.67	-.3792	-1.30	3.60

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BIVARIATE NORMAL STATISTICS OF X, Y

STATION (93214) - VANDENBERG

X = U(IAT T)
Y = V(IAT T)

MONTH	PER. OF REC.	ALT K4.	ALPHA DEG.	MEAN X	S.D. X	R (X,Y)	MEAN Y	S.D. Y	N
12	1/65 - 12/74	0	90.0	.40	2.84	-.4916	-1.09	3.20	614
12	1/65 - 12/74	1	90.0	1.27	4.42	-.0559	-2.63	7.31	614
12	1/65 - 12/74	2	90.0	3.87	5.74	.0425	-3.59	8.52	614
12	1/65 - 12/74	3	90.0	6.84	7.49	.0952	-4.29	9.88	614
12	1/65 - 12/74	4	90.0	9.70	9.34	.1001	-4.23	11.61	614
12	1/65 - 12/74	5	90.0	12.14	10.91	.1582	-5.24	13.00	614
12	1/65 - 12/74	6	90.0	14.29	12.22	.2265	-5.71	14.79	614
12	1/65 - 12/74	7	90.0	15.34	14.01	.2957	-6.17	16.63	614
12	1/65 - 12/74	8	90.0	18.38	15.58	.3447	-6.37	18.08	614
12	1/65 - 12/74	9	90.0	20.34	16.77	.3720	-6.80	19.62	614
12	1/65 - 12/74	10	90.0	22.18	17.48	.3933	-6.89	20.80	614
12	1/65 - 12/74	11	90.0	23.61	17.02	.3829	-6.81	20.58	614
12	1/65 - 12/74	12	90.0	24.15	15.54	.3324	-5.94	18.90	614
12	1/65 - 12/74	13	90.0	23.50	13.33	.3274	-4.83	16.29	614
12	1/65 - 12/74	14	90.0	21.76	11.80	.3968	-3.80	13.99	614
12	1/65 - 12/74	15	90.0	19.40	10.03	.4038	-3.18	11.75	614
12	1/65 - 12/74	16	90.0	16.30	8.86	.4113	-2.75	9.81	614
12	1/65 - 12/74	17	90.0	13.11	7.86	.4425	-2.39	8.27	614
12	1/65 - 12/74	18	90.0	9.51	6.73	.4795	-2.30	6.34	614
12	1/65 - 12/74	19	90.0	6.22	6.09	.4640	-2.41	4.91	614
12	1/65 - 12/74	20	90.0	3.96	5.99	.3738	-2.56	4.23	614
12	1/65 - 12/74	21	90.0	1.95	5.99	.2602	-2.71	3.95	614
12	1/65 - 12/74	22	90.0	.45	6.38	.3123	-2.59	3.76	614
12	1/65 - 12/74	23	90.0	-.30	7.18	.2410	-2.53	3.56	614
12	1/65 - 12/74	24	90.0	-.45	7.71	.2136	-2.77	3.49	614
12	1/65 - 12/74	25	90.0	-.70	8.55	.2615	-2.55	3.52	614
12	1/65 - 12/74	26	90.0	-.39	9.89	.3004	-2.54	3.94	614
12	1/65 - 12/74	27	90.0	.55	11.72	.3440	-2.71	4.54	614